

-300-

279 -GluLeuIleGluGluValAlaGly-286

288 -LysIleSerGlyGluGluAspArgTyrSerHis-298

308 -ValAspGlySerLysLysIleValAsp-316

322 -IleGluAlaLysAsnLysAlaLeuLeuGluLysThrAspThrAsnPhe-337

347 -TyrArgThrLysAspGlyPheGluThrTyrAspLysLeuGlyGluAlaAspArgLysAlaLeu-367

374 -LeuAlaGluAspLeuAlaGln-380

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AMPHI Regions - AMPHI

1-ValLysProArgPheTyrTrpAlaAlaCysAlaValLeuLeuThrAlaCysSerProGluProAlaAlaGluLy
 sThrValSerAlaAlaSerAlaSerAlaAlaThrLeuThrValProThrAlaArgGlyAspAlaValValProLys
 AsnProGluArgValAlaValTyrAspTrpAlaAlaLeuAspThrLeuThrGluLeuGlyValAsnValGlyAlaT
 hrThrAlaProValArgValAspTyrLeuGlnProAlaPheAspLysAlaAlaThrValGlyThrLeuPheGluPr
 oAspTyrGluAlaLeuHisArgTyrAsnProGlnLeuValIleThrGlyGlyProGlyAlaGluAlaTyrGluGln
 LeuAlaLysAsnAlaThrThrIleAspLeuThrValAspAsnGlyAsnIleArgThrSerGlyGluLysGlnMetG
 luThrLeuAlaArgIlePheGlyLysGluAlaArgAlaAlaGluLeuLysAlaGlnIleAspAlaLeuPheAlaGl
 nThrArgGluAlaAlaLysGlyLysGlyArgGlyLeuValLeuSerValThrGlyAsnLysValSerAlaPheGly
 ThrGlnSerArgLeuAlaSerTrpIleHisGlyAspIleGlyLeuProProValAspGluSerLeuArgAsnGluG
 lyHisGlyGlnProValSerPheGluTyrIleLysGluLysAsnProAspTrpIlePheIleIleAspArgThrAl
 aAlaIleGlyGlnGluGlyProAlaAlaValGluValLeuAspAsnAlaLeuValArgGlyThrAsnAlaTrpLys
 ArgLysGlnIleIleValMetProAlaAlaAsnTyrIleValAlaGlyGlyAlaArgGlnLeuIleGlnAlaAlaG
 luGlnLeuLysAlaAlaPheLysLysAlaGluProValAlaAlaGlyLysLys-321

Antigenic Index - Jameson-Wolf

1-ValLysProArgPheTyrTrpAlaAlaCysAlaValLeuLeuThrAlaCysSerProGluProAlaAlaGluLy
 sThrValSerAlaAlaSerAlaSerAlaAlaThrLeuThrValProThrAlaArgGlyAspAlaValValProLys
 AsnProGluArgValAlaValTyrAspTrpAlaAlaLeuAspThrLeuThrGluLeuGlyValAsnValGlyAlaT
 hrThrAlaProValArgValAspTyrLeuGlnProAlaPheAspLysAlaAlaThrValGlyThrLeuPheGluPr
 oAspTyrGluAlaLeuHisArgTyrAsnProGlnLeuValIleThrGlyGlyProGlyAlaGluAlaTyrGluGln
 LeuAlaLysAsnAlaThrThrIleAspLeuThrValAspAsnGlyAsnIleArgThrSerGlyGluLysGlnMetG
 luThrLeuAlaArgIlePheGlyLysGluAlaArgAlaAlaGluLeuLysAlaGlnIleAspAlaLeuPheAlaGl
 nThrArgGluAlaAlaLysGlyLysGlyArgGlyLeuValLeuSerValThrGlyAsnLysValSerAlaPheGly
 ThrGlnSerArgLeuAlaSerTrpIleHisGlyAspIleGlyLeuProProValAspGluSerLeuArgAsnGluG
 lyHisGlyGlnProValSerPheGluTyrIleLysGluLysAsnProAspTrpIlePheIleIleAspArgThrAl
 aAlaIleGlyGlnGluGlyProAlaAlaValGluValLeuAspAsnAlaLeuValArgGlyThrAsnAlaTrpLys
 ArgLysGlnIleIleValMetProAlaAlaAsnTyrIleValAlaGlyGlyAlaArgGlnLeuIleGlnAlaAlaG
 luGlnLeuLysAlaAlaPheLysLysAlaGluProValAlaAlaGlyLysLys-321

Hydrophilic Regions - Hopp-Woods

1-ValLysProArgPheTyrTrpAlaAlaCysAlaValLeuLeuThrAlaCysSerProGluProAlaAlaGluLy
 sThrValSerAlaAlaSerAlaSerAlaAlaThrLeuThrValProThrAlaArgGlyAspAlaValValProLys
 AsnProGluArgValAlaValTyrAspTrpAlaAlaLeuAspThrLeuThrGluLeuGlyValAsnValGlyAlaT
 hrThrAlaProValArgValAspTyrLeuGlnProAlaPheAspLysAlaAlaThrValGlyThrLeuPheGluPr
 oAspTyrGluAlaLeuHisArgTyrAsnProGlnLeuValIleThrGlyGlyProGlyAlaGluAlaTyrGluGln
 LeuAlaLysAsnAlaThrThrIleAspLeuThrValAspAsnGlyAsnIleArgThrSerGlyGluLysGlnMetG
 luThrLeuAlaArgIlePheGlyLysGluAlaArgAlaAlaGluLeuLysAlaGlnIleAspAlaLeuPheAlaGl
 nThrArgGluAlaAlaLysGlyLysGlyArgGlyLeuValLeuSerValThrGlyAsnLysValSerAlaPheGly
 ThrGlnSerArgLeuAlaSerTrpIleHisGlyAspIleGlyLeuProProValAspGluSerLeuArgAsnGluG
 lyHisGlyGlnProValSerPheGluTyrIleLysGluLysAsnProAspTrpIlePheIleIleAspArgThrAl
 aAlaIleGlyGlnGluGlyProAlaAlaValGluValLeuAspAsnAlaLeuValArgGlyThrAsnAlaTrpLys
 ArgLysGlnIleIleValMetProAlaAlaAsnTyrIleValAlaGlyGlyAlaArgGlnLeuIleGlnAlaAlaG
 luGlnLeuLysAlaAlaPheLysLysAlaGluProValAlaAlaGlyLysLys-321

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AMPHI Regions - AMPHI

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11-AlaAspArgAlaValArgSerAlaThr-19
 59-IleGlnAspThrAsn-63
 82-LeuSerAsnAlaAla-86
 139-LeuAsnAsnLysValPheGlnGlyTyr-147
 156-LeuAsnGlnAspIleTyrArgGluValGlnLysMetGly-168
 215-AsnValGlnAsnAspTyrAlaAspValLeu-224
 281-SerTyrPheAlaGluValProLysAlaGlyThrLysGluPheAspAspTyrValLysIleTrpGlyGlu-30
 3

Antigenic Index - Jameson-Wolf

9-ThrGlnAlaAspArgAlaValArg-16
 18-AlaThrAlaProLys-22
 29-LysIleIleAspGluLysThrGlyLysValSerPheAspThrArgGlnIle-45
 50-AspLeuSerLysGluGluLeuAlaSerIleGlnAspThrAsnGlyLysVal-66
 72-ProGlyIlePheAsnAsnArgGluAspSerLeuSerAsnAlaAlaLysGlnAsnArgAsnSerThrAsnGlySer-96
 104-ProProThrGlyLysTyrLysSerAspSerAsnAsnLysIleLys-118
 137-AspGlnLeuAsnAsnLys-142
 147-TyrLeuProLysThrAsnSerGluLysLeuAsnGlnAspIleTyrArgGluValGlnLysMetGlyAsnGlyTrpSerValAspThrSerAsnHisSerArgGlyGlyIle-183
 190-LysAspTrpValAsnAsnGlnLysGlnAsnGly-200
 203-ProIleArgLysAlaArgPhe-209
 214-ThrAsnValGlnAsnAspTyrAlaAspValLeuGlnLysAsnGlyTyr-229
 233-GlyAlaAspGlyLysThrTyrAsnSerGlySer-243
 247-ValHisAspLysAspPheValGlyAsnLys-256
 263-GlyThrAsnAspThrThrGlnGlyThrCysLysGlyLeuCys-276
 286-ValProLysAlaGlyThrLysGluPheAspAspTyrVal-298
 304-ValGluTyrAspAlaGlnGlyLysProIleAsnLysSerLysProIleLeuValGluProAsnLysThrLysAspAsnGluLysTyrGluLysGluAlaPhe-337

Hydrophilic Regions - Hopp-Woods

10-GlnAlaAspArgAlaValArg-16
 18-AlaThrAlaProLys-22
 29-LysIleIleAspGluLysThrGlyLysValSerPheAspThr-42
 50-AspLeuSerLysGluGluLeuAlaSer-58
 60-GlnAspThrAsnGly-64
 76-AsnAsnArgGluAspSerLeuSerAsnAlaAlaLysGlnAsnArgAsnSerThrAsn-94
 105-ProThrGlyLysTyrLysSerAspSerAsnAsnLysIleLys-118
 151-ThrAsnSerGluLysLeuAsnGlnAspIleTyrArgGluValGlnLysMet-167
 175-ThrSerAsnHisSerArgGlyGlyIle-183
 196-GlnLysGlnAsnGly-200
 203-ProIleArgLysAlaArgPhe-209
 219-AspTyrAlaAspValLeuGln-225
 234-AlaAspGlyLysThrTyrAsn-240
 247-ValHisAspLysAspPheVal-253
 265-AsnAspThrThrGlnGlyThrCys-272
 286-ValProLysAlaGlyThrLysGluPheAspAspTyrVal-298
 304-ValGluTyrAspAlaGlnGlyLysProIleAsnLysSerLysProIleLeu-320
 322-GluProAsnLysThrLysAspAsnGluLysTyrGluLysGluAlaPhe-337
 752-2

AMPHI Regions - AMPHI

6-GluArgMetThrGlnIleAlaLysLeuLeuAsnSerSer-18
 29-PheLeuThrGluIleLysAspTyrSerGluPhe-39

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51-TrpAspLysPheArgArgIle-57
 69-ValLysGluSerArgLysLysIleGlnLysProIleAsp-81
 105-LysSerCysGlySerSerIleGly-112
 114-SerSerLeuGlyGlyPheGly-120
 145-GlyAlaAlaThrThrArgLysValAlaLysAspMetLeuLysSerGln-160
 194-IleLeuAspLeuHisArgIleAlaThrSer-203
 233-GlnProProProHisGly-238
 240-ValHisThrLeuMetGluGluVal-247
 254-ThrTyrAspGlyValGluAsnProPheIleHisProValValGlnAlaIle-270
 272-LeuHisPheLeuIleGlyTyrIleHisPro-281
 309-IleSerIleSerArgLeuLeuLysAsnAlaProAlaGlnTyr-322
 347-IleLysArgAlaValAlaAspLeuGluHis-356
 371-AlaIleAlaGlnTyrThrGluLysIleGlyLysLeu-382
 390-LeuGlnLysAlaValGluGluSerGly-398
 422-SerLysLeuGlyGluTyrArgPhe-429
 435-SerGlyAsnAlaLeuGluTyrValAlaPro-444

Antigenic Index - Jameson-Wolf

4-LeuThrGluArgMetThrGln-10
 15-LeuAsnSerSerAlaAsnAsnProAspIleAspIleProAspPheLeuThrGluIleLysAspTyrSerGlu-38
 40-SerValThrAspGluAsnGlyThr-47
 52-AspLysPheArgArgIleHisThrGluAspThrArgMetLysTrpArgAlaValLysGluSerArgLysLysIleGlnLysProIleAsp-81
 92-IleProAspSerLeuGln-97
 102-LeuIleAspLysSerCysGlySerSerIleGly-112
 117-GlyGlyPheGlyArgSerGluGlnAsnArgPheLeu-128
 147-AlaThrThrArgLysValAlaLysAspMetLeuLysSerGlnArgLysProLysThrLysAspGluIle-169
 179-LysLysAlaValGluLeuLysAsnThr-187
 204-AsnAlaIleGluAsnLysAlaGluProGlyGlnPheArgGlnAspAspGluIlePhe-222
 226-IleAsnGlyAsnSerLeuTyrGlnProProProHisGly-238
 253-AsnThrTyrAspGlyValGluAsnProPhe-262
 280-HisProPheGlyAspGlyAsnGlyArgThrAlaArg-291
 313-ArgLeuLeuLysAsnAlaPro-319
 330-GluThrAspAspLeuAsp-335
 342-TyrGlnCysAspIleIleLys-348
 358-IleSerAspLysGlnLysHisGlnGlnGluPheLysAla-370
 375-TyrThrGluLysIleGlyLysLeuAsnGlnArgGln-386
 392-LysAlaValGluGluSerGlyLys-399
 415-AsnThrAlaArgSerAspLeuSerLysLeuGlyGluTyrArgPhe-429
 433-PheLysSerGlyAsnAlaLeu-439
 445-GlnAspLeuLeuGluArgLeuGluLysLys-454

Hydrophilic Regions - Hopp-Woods

4-LeuThrGluArgMetThrGln-10
 19-AlaAsnAsnProAspIleAspIle-26
 31-ThrGluIleLysAspTyrSerGlu-38
 40-SerValThrAspGluAsnGly-46
 52-AspLysPheArgArgIleHisThrGluAspThrArgMetLysTrpArgAlaValLysGluSerArgLysLysIleGlnLysProIle-80
 102-LeuIleAspLysSerCysGly-108
 120-GlyArgSerGluGlnAsnArgPheLeu-128
 147-AlaThrThrArgLysValAlaLysAspMetLeuLysSerGlnArgLysProLysThrLysAspGluIle-169

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179-LysLysAlaValGluLeuLysAsn-186
204-AsnAlaIleGluAsnLysAlaGluProGlyGlnPheArgGlnAspAspGluIlePhe-222
283-GlyAspGlyAsnGlyArgThrAlaArg-291
330-GluThrAspAspLeuAsp-335
358-IleSerAspLysGlnLysHisGlnGlnGluPheLysAla-370
375-TyrThrGluLysIleGlyLysLeuAsnGlnArgGln-386
392-LysAlaValGluGluSerGlyLys-399
416-ThrAlaArgSerAspLeuSerLysLeuGlyGlu-426
446-AspLeuLeuGluArgLeuGluLysLys-454

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AMPHI Regions - AMPHI

44-IleValGluMetMetThrTyrIleLeu-52
75-TrpAlaTyrPheAspGluValAlaGln-83
109-GlnTrpPheAlaProLeu-114
121-ArgSerAlaValArgGlnLeu-127
129-ProSerThrThrValArgAla-135

Antigenic Index - Jameson-Wolf

13-LysLeuTyrProAsnGluGlnTrpAsnGluSerGluAla-25
34-TyrGlnSerProThrHisArgGln-41
55-LeuLysAsnGlyGln-59
64-CysLysGlyThrGlnProIleGly-71
85-HisTyrLeuGluSerAspArgHisLeuArgAspAsnSerAspTrpAsnCysGlyAspAsnIle-105
112-AlaProLeuGlyHisSerHisGlnMetArgSerAlaVal-124
136-LeuTyrHisLysGlySerAspLysGlyLeuArg-146

Hydrophilic Regions - Hopp-Woods

19-GlnTrpAsnGluSerGluAla-25
87-LeuGluSerAspArgHisLeuArgAspAsnSerAsp-98
139-LysGlySerAspLysGlyLeuArg-146

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AMPHI Regions - AMPHI

29-ArgIleGlyThrLeuGluLysGlyAlaMet-38
67-MetProHisIlePheAlaGlnTyrPheProGluGlyPheLeuAsp-81
108-ArgGluThrLeuGlyArg-113
121-ProLeuPheAsnGluTrpIleAspGlyLeuGlu-131
152-PheGlnGlnTyrMetAlaGluIle-159
161-HisHisGlyArgPheValSerValSer-169
181-ArgArgAsnThrLys-185
189-SerTyrIleAlaLysGly-194
249-MetGluAspPheThrSerLeuArgGln-257
269-AlaAlaIleAlaGlnIleIleArgGlnIleSerGlyArgProAsp-283
288-HisPhePheAsnGlnLeuAlaAla-295
324-ValTyrAspValLeuAspThr-330
336-GlyThrGlnGlyIlePheAspAlaTyrAsp-345
399-TyrSerAspValLeu-403

Antigenic Index - Jameson-Wolf

8-ValSerGlyAsnArgMetArgLysProArg-17
25-AlaAsnAspGluArgIleGlyThrLeuGluLysGlyAla-37
43-TyrAspAsnProAsnSerSerLeu-50
54-HisTyrGlnAspArgSerLysVal-61
75-PheProGluGlyPheLeu-80
93-AlaProPheGluAspAsnGluMetLeu-101
114-IleHisValArgCysAsnAspProLeuPhe-123

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130-LeuGluMetLysAsnProArgIleLeuThrGluArgAspLeuLeu-144
 163-GlyArgPheValSer-167
 170-GlyIleGlnGlnLysMetSerLeuAspAlaIleArgArgAsnThrLysGlnThrAla-188
 194-GlyPheAspAlaSerGluTyrProCys-202
 224-ThrSerLeuSerGluAspSerSer-231
 236-ArgArgPheAspValSerGluGlnGlyTyr-245
 250-GluAspPheThrSer-254
 256-ArgGlnTyrSerValGluAspLysTyrLysGlySerTyr-268
 278-IleSerGlyArgProAspGluAspLeu-286
 299-LeuLysAsnGlyAspAlaHisLeu-306
 315-AspGluTyrAspVal-319
 343-AlaTyrAspAspThrLeu-348
 352-LeuThrAsnHisGlyLysLysThrTyrProSerLysAsnThr-365
 369-PheAlaGluLysTyrCysAspLeuGlyArgGluAspAlaSerPhe-383
 389-ValGlnAlaLysGluGlnVal-395
 399-TyrSerAspValLeuArgGluAsnGluTrpLeu-409
 415-PheIleProAspGluAsnGluGluGlyLeu-424

Hydrophilic Regions - Hopp-Woods

10-GlyAsnArgMetArgLysProArg-17
 25-AlaAsnAspGluArgIleGlyThrLeuGluLysGlyAla-37
 55-TyrGlnAspArgSerLysVal-61
 93-AlaProPheGluAspAsnGluMetLeu-101
 114-IleHisValArgCysAsnAsp-120
 130-LeuGluMetLysAsnProArgIleLeuThrGluArgAspLeuLeu-144
 175-MetSerLeuAspAlaIleArgArgAsnThrLysGln-186
 194-GlyPheAspAlaSerGlu-199
 225-SerLeuSerGluAspSerSer-231
 236-ArgArgPheAspValSerGlu-242
 250-GluAspPheThrSer-254
 258-TyrSerValGluAspLysTyrLysGly-266
 278-IleSerGlyArgProAspGluAspLeu-286
 300-LysAsnGlyAspAlaHisLeu-306
 315-AspGluTyrAspVal-319
 354-AsnHisGlyLysLysThrTyrProSer-362
 369-PheAlaGluLysTyrCysAspLeuGlyArgGluAspAlaSerPhe-383
 389-ValGlnAlaLysGluGlnVal-395
 401-AspValLeuArgGluAsnGluTrpLeu-409
 417-ProAspGluAsnGluGluGlyLeu-424
 755

AMPHI Regions - AMPHI

22-AsnAsnTyrThrAsnAlaTyrSerAspIleLysThrIle-34
 38-HisGlyPheGluAsnIleGlnGly-45
 75-SerCysIleSerAsnIleLysPhe-82
 124-GluGlnIleAsnGlnValLeu-130

Antigenic Index - Jameson-Wolf

10-MetAspThrAsnCysLeuLysAspAsnTyrHisGlyAsnAsnTyrThrAsnAlaTyrSerAsp-30
 42-AsnIleGlnGlySer-46
 48-TyrLeuGlyArgGluGlyIleSerGluAlaHis-58
 83-TyrArgLeuGluSerAspLeu-89
 108-ArgValGluGlnLeuArg-113
 120-GlyLeuSerAspGluGlnIle-126
 129-ValLeuGluLysGlnLysPheGluLeuGluSerProAsnLeuLys-143

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Hydrophilic Regions - Hopp-Woods

10-MetAspThrAsnCysLeuLysAspAsnTyrHis-20
 49-LeuGlyArgGluGlyIleSerGluAlaHis-58
 83-TyrArgLeuGluSerAspLeu-89
 108-ArgValGluGlnLeuArg-113
 120-GlyLeuSerAspGluGlnIle-126
 129-ValLeuGluLysGlnLysPheGluLeuGluSerProAsnLeu-142
 756

AMPHI Regions - AMPHI

6-AlaGlnThrLeuValGluIleGlnAspSerLeuTyrArgValValSerThrVal-23
 29-AsnLeuLysArgLeuThr-34
 57-AspPheLysGluThrLeuValArgPheGlyArgAspMetLeuGlnAspMetPro-74
 98-TyrLeuGluTyrLeuLysGlnValAlaSer-107
 113-GluArgLeuTyrAsnAlaValAspArgLeuAlaGluSerGlnGluArg-128
 130-ThrSerAlaIleLeu-134
 136-GlyAlaArgGlyAlaAspPhe-142

Antigenic Index - Jameson-Wolf

11-GluIleGlnAspSerLeuTyr-17
 24-GlnTyrGlyAspAsnLeuLysArgLeuThrAlaAspLysArgLysGlnTyr-41
 45-PheLysIleSerGluGlySerThrArgValGluSerAspPheLysGluThrLeu-62
 65-PheGlyArgAspMetLeuGlnAspMetProProLysIleArgSer-79
 105-ValAlaSerGluGlyTyrGlnThrGluArgLeuTyrAsnAlaValAspArgLeuAlaGluSerGlnGluArg
 IleThr-130
 135-LysGlyAlaArgGlyAlaAsp-141
 144-GlnIleGlyArgArgSerTyrSerArgGluAspIleSerGluAlaAsnArgArgAlaGluArgValProTyr
 -167
 171-LeuValSerAspGlyAsn-176
 182-SerAspIleGlyAsp-186

Hydrophilic Regions - Hopp-Woods

11-GluIleGlnAspSerLeu-16
 25-TyrGlyAspAsnLeuLysArgLeuThrAlaAspLysArgLysGlnTyr-41
 45-PheLysIleSerGluGlySerThrArgValGluSerAspPheLysGluThrLeu-62
 65-PheGlyArgAspMetLeuGln-71
 73-MetProProLysIleArgSer-79

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114-ArgLeuTyrAsnAlaValAspArgLeuAlaGluSerGlnGluArgIleThr-130

135-LysGlyAlaArgGlyAlaAsp-141

144-GlnIleGlyArgArgSerTyrSerArgGluAspIleSerGluAlaAsnArgArgAlaGluArgValProTyr-167

757

AMPHI Regions - AMPHI

47-AspTyrGlnSerAlaAlaAsnLys-54

79-AsnLeuLeuHisAspPheSerAspGlyLeu-88

97-LysAlaAspLysIleThr-102

115-GlnLysAlaGluLysLeuSerLysAlaAla-124

140-ArgAspThrGlyAsp-144

154-AsnAlaGlnLysGluProThrArgGluTrpAla-164

Antigenic Index - Jameson-Wolf

16-AlaCysGlySerGlnSerGluGlnProAlaSerAlaGlnProGlnGluGlnAlaGlnSerGluLeuLysThrMetPro-42

46-ThrAspTyrGlnSerAlaAlaAsnLysGlyLeuAsnAspGlnLysThrGlyLeuThrLeu-65

73-AspAsnAlaGluGlyLysAsnLeuLeuHisAspPheSerAspGlyLeu-88

93-ValAspThrAspLysAlaAspLysIleThrAla-103

108-TrpAsnThrAspAlaMetProGlnLysAlaGluLysLeuSerLys-122

132-AlaProGluAspArgThrMetLeuArgAspThrGlyAspGlnIleGluMetAlaIleAspSerHisAsnAlaGlnLysGluProThrArgGluTrpAlaArgGlyGlyIle-168

Hydrophilic Regions - Hopp-Woods

19-SerGlnSerGluGluGlnProAla-26

29-GlnProGlnGluGlnAlaGlnSerGluLeuLysThr-40

50-SerAlaAlaAsnLysGlyLeuAsnAspGlnLysThr-61

73-AspAsnAlaGluGlyLysAsnLeu-80

93-ValAspThrAspLysAlaAspLysIleThrAla-103

112-AlaMetProGlnLysAlaGluLysLeuSerLys-122

132-AlaProGluAspArgThrMetLeuArgAspThrGlyAspGlnIleGluMetAlaIle-150

152-SerHisAsnAlaGlnLysGluProThrArgGluTrpAlaArg-165

758

AMPHI Regions - AMPHI

-307-

15-AlaThrLeuAlaAspGluLeuGlnTyrVal-24
 53-AlaGluValAlaAla-57
 60-GlnThrValIleSerGluIleValArgArgHisThr-71
 87-ProTyrLeuGlyGlyLeuProGluAlaLeuHisThr-98
 125-PheAlaSerProGlyGlyTrpGlnIleIleGly-135

Antigenic Index - Jameson-Wolf

9-ArgPheAspThrAspLeu-14
 32-AspHisGlnGlyLysLeuVal-38
 44-TyrGlyGlyGluTyrGlyProAspLeuAlaGlu-54
 66-IleValArgArgHisThrAla-72
 96-LeuHisThrProArgArgAlaValProArgThrSerValPro-109
 115-IleGlyGlySerGln-119
 145-AspLeuAsnProPro-149
 154-AlaGlyAspGlnValArgPheValAlaGluArgIleGluPro-167

Hydrophilic Regions - Hopp-Woods

10-PheAspThrAspLeu-14
 32-AspHisGlnGlyLysLeuVal-38
 48-TyrGlyProAspLeuAlaGlu-54
 66-IleValArgArgHisThr-71
 97-HisThrProArgArgAlaValPro-104
 156-AspGlnValArgPheValAlaGluArgIleGluPro-167

759**AMPHI Regions - AMPHI**

8-ProPheCysSerValLeuSerThrLeuGlyLeu-18
 35-TyrGlnTyrPheArgAspPheAlaGlu-43
 63-LysIleLeuGlyArgValLeuAsnGlyIlePro-73
 94-TyrValAsnSerVal-98
 140-ArgLeuAsnLysLeuValThrGluIle-148
 185-ThrGlnGlnValArgLysAlaAsp-192
 207-GlyGlyThrProLeu-211
 261-LeuSerThrTyrAlaGlyPheAspAsnPhePheAsnLys-273
 282-IleArgSerThrIle-286
 313-ThrLeuGlnGlyLeu-317
 408-LysGlyAspArgLeuSerLysLeuGlyAla-417
 446-AlaSerAspGlySerLysGlnAla-453
 548-ValTyrGluTyrIle-552
 597-GluGlnValAlaGlnAlaGlu-603
 764-LysThrProGluCysTyrArgSerTyrHisSer-774
 788-GluAsnTyrArgAlaLeu-793
 820-SerIleArgAlaGlyLys-825
 878-ThrLeuAspGlyPheGlyThrPheArgPheLeuThrGlyIle-891
 921-ProGlnThrThrGlu-925
 948-TyrAlaAspLeuGlyAlaTyr-954
 967-LeuTyrAsnProLeuLys-972
 992-TyrAsnGlnLeuGlnAlaThrAspIleSerArgGlnValGln-1005
 1013-GlnAlaLeuGlnAlaTrpGlnAsnSerGln-1022
 1040-LysGlnThrAspProLeuThrGlyIleLeuThr-1050
 1062-SerAlaAspIleCysArgGlnValAlaLysAlaAlaAspThr-1075
 1084-GluLeuAspThrTyr-1088
 1102-AlaArgGlnGlyGlyAspAlaGlnAlaValGluThrAlaArgHisAlaTyrLeuAsnAlaLeuAsnArgLeuSerArgGlnIleHisSerLeu-1132
 1139-IleArgMetProAsnLeuAlaGluLeuIleSerArgSerAlaAsnThrAla-1155
 1168-GlnAlaGlyArgArgIleAspArgHisLeuThrAspPro-1180

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1199-GlyThrHisArgProTyrGlnGlnThrThrAsn-1209
 1234-ThrAsnAsnArgPheAspGlu-1240
 1328-GluIleAsnSerProAlaGlnIle-1335
 1346-AspLysThrValGlu-1350
 1385-GlnAlaAlaHisGlyThrLeu-1391

Antigenic Index - Jameson-Wolf

29-ValArgAsnAspValAspTyrGlnTyr-37
 40-AspPheAlaGluAsnLysGlyAla-47
 56-SerIleGlnAspLysGlnGlyLysIleLeu-65
 73-ProMetProAspPheArgValSerAsnArgGlnThrAla-85
 110-GlyAsnAspThrGlnAsnProGluGluGlnAlaTyr-121
 125-LeuValSerArgAsnProHisProAspTyrAspTyrHisLeuProArgLeuAsnLysLeuValThr-146
 148-IleSerProThrAla-152
 160-GlyAsnGlyGlnProLysAla-166
 168-AlaTyrLeuAspThrAspArgPhePro-176
 181-LeuGlySerGlyThrGlnGlnValArgLysAlaAspGlyThrArgThrArgThrAlaPro-200
 206-ThrGlyGlyThrProLeuLys-212
 226-SerLeuThrAspGlnProLeuAsn-233
 238-AlaGlyAspSerGlySerPro-244
 249-AspLysHisGluAsnArg-254
 285-ThrIleArgGlnTyrGluThrArgLeuAspVal-295
 303-IleTrpArgAspAsnGlyAsnGlyAsnSerThr-313
 316-GlyLeuAsnGluArgIleThr-322
 327-AsnProSerLeuAlaProGlnAsnAspSerArgHisMetProSerGluAspAlaGlyLys-346
 350-LeuSerSerArgPheAspAsnLysThr-358
 364-AsnIleAsnGlnGlyAla-369
 382-GlyLysAsnHisThr-386
 394-ValAlaAspGlyLysArgValPhe-401
 404-ValSerAsnProLysGlyAspArgLeuSerLysLeuGlyAla-417
 424-GlyGlnGlyIleAsnGlnGlyAspIleSerIleGlyGluGlyThr-438
 444-LysAlaAlaSerAspGlySerLysGlnAla-453
 459-IleThrSerGlyArgGlyThr-465
 469-AlaAspSerGlnGlnIleLysProGluAsn-478
 483-PheArgGlyGlyArgLeuAspLeuAsnGlyAsnAsnLeu-495
 501-ArgHisAlaAspGlyGlyAla-507
 512-HisAsnProAspGlnAlaAla-518
 528-LeuSerProGluHisValGlu-534
 538-TrpGlyAsnArgProGlnGlyAsn-545
 553-AsnProHisArgAsnArgArgThrAsp-561
 566-LysProGlyGlyAsnProArgGlu-573
 577-LeuAsnMetLysAsnSerThrSer-584
 589-GlyAsnAsnArgGlnGlnAlaAlaGluGlnValAlaGlnAlaGluAsnAlaArgProAspLeu-609
 614-GlyTyrLeuGlyGluAsnAlaGlnThrGlyLysAlaAlaProSerTyrSerLysThrAsnGluAlaAlaIle
 GluLysThrArgHis-642
 650-GlyArgProGluTyrArgTyrAsnGly-658
 664-TyrArgProLysArgThrAspSer-671
 677-GlyGlyMetAsnLeuAsnGly-683
 694-ValSerGlyArgProValProHisAlaTyrAspHisGlnAlaLysArgGluProValLeuGluAsnGluTrp
 ThrAspGlySerPheLysAla-724
 726-ArgPheThrLeuArgAsnHisAla-733
 736-ThrAlaGlyArgAsnThrAlaHisLeuAspGlyAspIleThr-749
 761-ThrGlnGlyLysThrProGluCysTyrArgSerTyrHisSerGlySerThrHis-778
 785-LeuLysAlaGluAsnTyrArg-791
 796-ThrGlnValArgGlyAspIleThrLeuAsnAspArgSerGluLeuArgLeuGlyLys-814

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820-SerIleArgAlaGlyLysAspThrAlaValArgMetGluAlaAspSerAsnTrpThr-838
 840-SerGlnSerSerHisThrGly-846
 859-ProAspPheAlaAsnAsnThrHisAsnAsnArgPheAsn-871
 877-GlyThrLeuAspGly-881
 891-IleValArgLysGlnAsnAlaProProLeuLysLeuGluGlyAspSerArgGlyAla-909
 914-VallLysAsnThrGlyGlnGluProGlnThrThrGluSer-926
 932-LeuAsnProLysHisSerHisGln-939
 957-IleLeuArgLysAsnAsnAsnGlyTyr-965
 969-AsnProLeuLysGluAlaGluLeuGlnIleGluAlaThrArgAlaGluHisGluArgAsnGlnGlnAla-991
 999-AspIleSerArgGlnValGlnHisAspSerAspAlaThrArgGlnAla-1014
 1018-TrpGlnAsnSerGlnThrGluLeuAlaArgIleAspSerGln-1031
 1039-LeuLysGlnThrAspProLeuThr-1046
 1064-AspIleCysArgGlnValAlaLysAlaAlaAspThrAsnAsp-1077
 1083-ThrGluLeuAspThrTyrIleGluArgValGluMetAlaGluSerGluLeuAspLysAlaArgGlnGlyGlyAlaGlnAla-1110
 1123-AsnArgLeuSerArg-1127
 1147-LeuIleSerArgSerAlaAsnThrAlaValSerGlu-1158
 1160-AlaAlaTyrAsnThrGlyArgGlnGlnAlaGlyArgArgIleAspArgHisLeuThrAspProGlnGlnGlnAsn-1184
 1188-GluThrGlyThrGlnGlnThrAspTyrHisSerGlyThrHisArgProTyrGlnGlnThrThrAsn-1209
 1219-IleThrAspArgLeuSer-1224
 1229-LeuThrAspGluArgThrAsnAsnArgPheAspGluGlyValSerAlaArgAsnArgSerAsnGly-1250
 1255-VallLysGlyGluAsnGlyAla-1261
 1269-GlyTyrSerAsnSerArgThrArgPheThrAspTyrAspGlyAlaAlaValArg-1286
 1288-HisAlaTrpAspAlaGlyIleAsnThrGlyIleLysIleAspThrGlyIle-1304
 1313-ArgIleAsnArgSerAsnGlyAsnArgTyrVal-1323
 1326-GlyAlaGluIleAsnSerProAlaGlnIleGln-1336
 1343-IleArgLeuAspLysThrValGlu-1350
 1360-PheSerSerAspTyrTyrHisThrArgGlnAsnSerGlySerAla-1374
 1376-SerValAsnAspArgThrLeu-1382
 1398-AlaGlyTyrLysGlyTrpAsn-1404
 1411-TyrGlyLysAspSerAsnThrAlaArgHisLysGlnAlaGly-1424

Hydrophilic Regions - Hopp-Woods

29-ValArgAsnAspValAsp-34
 40-AspPheAlaGluAsnLysGly-46
 56-SerIleGlnAspLysGlnGlyLysIleLeu-65
 75-ProAspPheArgValSerAsnArgGlnThr-84
 111-AsnAspThrGlnAsnProGluGluGlnAlaTyr-121
 129-AsnProHisProAspTyr-134
 140-ArgLeuAsnLysLeuValThr-146
 162-GlyGlnProLysAla-166
 170-LeuAspThrAspArg-174
 186-GlnGlnValArgLysAlaAspGlyThrArgThrArgThr-198
 249-AspLysHisGluAsn-253
 285-ThrIleArgGlnTyrGluThrArgLeuAspVal-295
 306-AspAsnGlyAsnGly-310
 317-LeuAsnGluArgIleThr-322
 332-ProGlnAsnAspSerArgHisMetProSerGluAspAlaGlyLys-346
 352-SerArgPheAspAsnLysThr-358
 395-AlaAspGlyLysArg-399
 406-AsnProLysGlyAspArgLeuSerLys-414
 444-LysAlaAlaSerAspGlySerLysGlnAla-453
 472-GlnGlnIleLysProGlu-477

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484-ArgGlyGlyArgLeuAspLeuAsnGly-492
 501-ArgHisAlaAspGlyGly-506
 555-HisArgAsnArgArgThrAsp-561
 568-GlyGlyAsnProArgGlu-573
 591-AsnArgGlnGlnAlaAlaGluGlnValAlaGlnAlaGluAsnAlaArgProAsp-608
 619-AsnAlaGlnThrGlyLysAlaAlaProSerTyrSerLysThrAsnGluAlaAlaIleGluLysThrArgHis
 -642
 652-ProGluTyrArgTyr-656
 664-TyrArgProLysArgThrAspSer-671
 705-HisGlnAlaLysArgGluProValLeu-713
 736-ThrAlaGlyArgAsn-740
 744-LeuAspGlyAspIleThr-749
 764-LysThrProGluCysTyrArg-770
 785-LeuLysAlaGluAsnTyrArg-791
 797-GlnValArgGlyAspIleThrLeuAsnAspArgSerGluLeuArgLeuGlyLys-814
 822-ArgAlaGlyLysAspThrAlaValArgMetGluAlaAspSer-835
 891-IleValArgLysGlnAsnAlaPro-898
 900-LeuLysLeuGluGlyAspSerArgGly-908
 916-AsnThrGlyGlnGluProGlnThrThrGlu-925
 934-ProLysHisSerHis-938
 957-IleLeuArgLysAsnAsnAsn-963
 970-ProLeuLysGluAlaGluLeuGlnIleGluAlaThrArgAlaGluHisGluArgAsnGlnGln-990
 1004-ValGlnHisAspSerAspAlaThrArgGlnAla-1014
 1021-SerGlnThrGluLeuAlaArgIleAspSer-1030
 1039-LeuLysGlnThrAspPro-1044
 1064-AspIleCysArgGlnValAlaLysAlaAlaAspThrAsnAsp-1077
 1087-ThrTyrIleGluArgValGluMetAlaGluSerGluLeuAspLysAlaArgGlnGlyGlyAspAlaGlnAla-1110
 1164-ThrGlyArgGlnGlnAlaGlyArgArgIleAspArgHisLeuThrAspProGlnGln-1182
 1200-ThrHisArgProTyrGln-1205
 1219-IleThrAspArgLeuSer-1224
 1229-LeuThrAspGluArgThrAsnAsnArgPheAspGluGlyValSerAlaArgAsnArgSerAsnGly-1250
 1272-AsnSerArgThrArgPheThrAspTyrAspGlyAlaAlaValArg-1286
 1298-IleLysIleAspThr-1302
 1313-ArgIleAsnArgSerAsnGly-1319
 1326-GlyAlaGluIleAsnSer-1331
 1343-IleArgLeuAspLysThrValGlu-1350
 1376-SerValAsnAspArgThrLeu-1382
 1411-TyrGlyLysAspSerAsnThrAlaArgHisLysGlnAlaGly-1424
 760

AMPHI Regions - AMPHI

16-ThrValLeuAlaAlaLeuSerSer-23

29-GlnThrGluGlyLeu-33

40-GlyGlnArgSerTyr-44

58-PheAlaAlaThrValGlyThrLys-65

67-ProAlaSerLeuArgGluIleProGlnSerVal-77

88-ArgAsnValAspThrPheAspGlnLeuAlaArg-98

131-ProAlaGlnMetGlnSerIleAsnGlyThrLeuProAsnLeuPheAlaPheAspArgValGluValMetArg
 GlyProSerGlyLeuPheAspSerSerGlyGluMetGlyGlyIleValAsnLeuValArgLysArgProThrLysAla
 laPheGlnGlyHisAlaAlaAla-187

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190-GlyThrHisLysGln-194

277-SerLeuProGlnHis-281

296-HisAspValPheAlaAspLeuLysHis-304

334-LeuAsnAsnThrGlyGlnAla-340

381-ArgLeuArgSerThr 385AsnGluGlnGlyArgSerThr-392

398-AlaLeuAspGlyPheArgAlaLeuPro-406

419-LysGlyPheAsnHisSer-424

438-LysThrValPheArgProLeuGluGlyLeuSerLeuIleAlaGly-452

465-GlyLysThrLeuHisLysAlaSerLys-473

515-ProArgGluGlyAsnGln-520

565-GlyLysArgValMetGluGlyValGlu-573

617-AlaAsnLeuTrpThrThrTyr-623

635-ValAsnAlaMetSerGlyIleThrSerSer-644

650-GlyGlyTyrAlaThrPheAspAlaMetAlaAla-660

Antigenic Index - Jameson-Wolf

29-GlnThrGluGlyLeuGlu-34

37-HisIleLysGlyGlnArgSer TyrAsn-45

48-AlaThrGluLysAsnGlyAspTyrSerSer-57

68-AlaSerLeuArgGluIleProGln-75

83-GlnGlnValLysAspArgAsnValAspThrPheAspGlnLeuAlaArgLysThrProGlyLeuArgValLeuSerAsnAspAspGlyArgSer-113

118-ArgGlyTyrGluTyrSerGluTyrAsnIleAspGlyLeu-130

148-AspArgValGluValMetArgGlyProSerGlyLeuPheAspSerSerGlyGluMetGlyGly-168

173-ValArgLysArgProThrLysAlaPhe-181

190-GlyThrHisLysGlnTyrLysAlaGluAlaAspValSerGlySerLeuAsnSerAspGlySerValArgGlyArgVal-215

221-GlyAlaSerProArgProAlaGluLysAsnAsnArgArgGluThr-235

242-TrpAspIleAsnProAspThrValLeu-250

257-GlnGlnArgArgLeuAlaProTyrAsn-265

268-ProAlaAspAlaAsnAsnLysLeuProSerLeu-278

306-PheGlyAsnGlyGlyTyrGly-312

314-ValGlyMetArgTyrSerAspArgLysAlaAspSerAsnTyr-327

330-AlaGlySerLysLeuAsnAsnThrGlyGlnAlaAsp-341

346-GlyThrAspIleLysGlnLysAlaPheAlaValAspAlaSerTyrSerArgProPhe-364

378-AspTyrAsnArgLeuArgSerThrAsnGluGlnGlyArgSerThrLeuSerLysSerValAla-398

413-AsnAlaArgAlaGlyAsnLysGlyPheAsn-422

424-SerValThrGluGluAsnLeuAspGluThrGlyLeu-435

451-AlaGlyGlyArgValGlyHisHisLysIleGluSerGlyAspGlyLysThrLeuHisLysAlaSerLysThrLysPhe-476

-312-

485-AspIleAspGlySerAsnSerLeu-492
501-ThrProGlnThrSerIleGlyThrAspGlyLysLeuLeuLysProArgGluGlyAsnGln-520
524-GlyTyrLysGlySerTyrMetAspAspArgLeuAsnThr-536
542-ArgMetLysAspLysAsnAla-548
551-ProLeuAspSerAsnAsnLysLysThrArgTyr-561
563-AlaLeuGlyLlGluThrGluIle-576
596-GlnIleLysThrAlaSerAsnSerArgAspGluGlyIle-608
614-LysHisSerAlaAsnLeu-619
663-PheThrProLysLeuLysLeu-669
671-IleAsnAlaAspAsnIlePhe-677
685-ValGlySerGluSerThrPheAsnIleProGlySerGluArgSerLeu-700

Hydrophilic Regions - Hopp-Woods

39-LysGlyGlnArgSer-43
48-AlaThrGluLysAsnGlyAsp-54

68-AlaSerLeuArgGluIleProGln-75
84-GlnValLysAspArgAsnValAspThr-92

94-AspGlnLeuAlaArgLysThrProGly-102

106-LeuSerAsnAspAspGlyArgSer-113

148-AspArgValGluValMetArgGlyPro-156

162-SerSerGlyGluMet-166

173-ValArgLysArgProThrLys-179

193-LysGlnTyrLysAlaGluAlaAspVal-201
205-LeuAsnSerAspGlySerValArgGlyArgVal-215

222-AlaSerProArgProAlaGluLysAsnAsnArgArgGluThr-235

242-TrpAspIleAsnPro-246

257-GlnGlnArgArgLeuAla-262

268-ProAlaAspAlaAsnAsnLysLeu-275

314-ValGlyMetArgTyrSerAspArgLysAlaAspSer-325

247-ThrAspIleLysGlnLysAlaPheAla-355
378-AspTyrAsnArgLeuArgSerThrAsnGluGlnGlyArgSerThrLeuSer-394

414-AlaArgAlaGlyAsnLysGlyPhe-421

425-ValThrGluGluAsnLeuAspGlu-432

454-ArgValGlyHisHisLysIleGluSerGlyAspGlyLysThrLeuHisLysAlaSerLysThrLysPhe-476

506-IleGlyThrAspGlyLysLeuLeuLysProArgGluGlyAsnGln-520

528-SerTyrMetAspAspArgLeuAsnThr-536
 542-ArgMetLysAspLysAsnAla-548
 551-ProLeuAspSerAsnAsnLysLysThrArgTyr-561
 563-AlaLeuGlyLysArgValMetGluGlyValGluThrGluIle-576
 597-IleLysThrAlaSerAsnSerArgAspGluGly-607

695-GlySerGluArgSerLeu-700

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AMPHI Regions - AMPHI

51-LysGlyTyrIleAsn-55
 70-GluThrProGlnThrIleAspThrLeuAsnIle-80
 89-AsnAspLeuSerSerIleLeuGlu-96
 125-TyrArgAspGlyValArg-130
 137-ArgSerThrAlaAsn-141
 143-GluArgValGluIleLeuLysGlyProSer-152
 164-ValIleAsnMetValSerLysTyrAlaAsnPheLysGlnSerArgAsnIleGlyAlaValTyrGlySerTrpAla-188
 249-TyrAspAsnValGluArgThrProAspArgSerProThrLysSerVal-264
 316-AspPheAspHisPheTyrAla-322
 388-IleAsnProTyrAspArg-393
 452-SerSerArgGlnTyr-456
 475-HisThrLeuTyrAlaSerTyrAsnLysGlyPhe-485
 511-TyrThrArgGlnTyrGlu-516
 526-AspArgLeuSerThrThr-531
 568-LeuSerAlaIleGlyGlnIleIle-575
 608-AsnThrSerAsnVal-612
 651-LeuProGlyPheAlaArgValAspAlaMet-660

Antigenic Index - Jameson-Wolf

23-AlaAspThrGlnAspAsnGlyGluHis-31
 43-GlyGlnSerAspThrSerValLeu-50
 54-IleAsnTyrAspGluAlaAlaValThrArgAsnGlyGlnLeuIleLysGluThrProGlnThrIle-75
 79-AsnIleGlnLysAsnLysAsnTyrGlyThrAsnAsp-90
 97-GlyAsnAlaGlyIle-101
 103-AlaAlaTyrAspMetArgGlyGluSerIlePhe-113
 117-PheGlnAlaAspAlaSerAspIleTyrArgAspGlyValArgGluSerGlyGlnValArgArgSerThrAlaAsnIleGluArgValGluIleLeuLysGlyProSerSer-153
 157-GlyArgThrAsnGlyGlyGly-163
 172-AlaAsnPheLysGlnSerArgAsnIleGly-181
 187-TrpAlaAsnArgSerLeuAsnMetAspIle-196
 198-GluValLeuAsnLysAsnValAlaIle-206
 208-LeuThrGlyGluValGlyArgAlaAsnSerPheArgSerGlyIleAspSerLysAsnVal-227
 235-ValLysLeuAspAsnGlyLeuLysTrpThrGlyGlnTyrThrTyrAspAsnValGluArgThrProAspArgSerProThrLysSerValTyrAspArgPheGlyLeuProTyr-272
 276-PheAlaHisArgAsnAspPheValLysAspLysLeuGln-288
 290-TrpArgSerAspLeuGluTyrAlaPheAsnAspLysTrpArgAlaGlnTrp-306
 312-ThrAlaAlaGlnAspPhe-317
 322-AlaGlySerGluAsnGlyAsnLeuIleLysArgAsnTyrAlaTrpGlnGlnThrAspAsnLysThrLeuSer-345
 366-GlyMetAspTyrSerArgGluHisArgAsnProThrLeu-378
 389-AsnProTyrAspArgAlaSerTrpProAlaSerGlyArgLeuGlnPro-404

407-ThrGlnAsnArgHisLysAlaAspSer-415
 425-SerAlaThrProAspLeuLysPheValLeuGlyGlyArgTyrAspLysTyrThrPheAsnSerGluAsnLys
 LeuThrGlySerSerArgGlnTyrSerGlyHisSerPheSerProAsn-464
 481-TyrAsnLysGlyPheAlaProTyrGlyGlyArgGlyGly-493
 506-AsnAlaAspProGluTyrThrArgGlnTyrGluThrGlyValLysSerSerTrpLeuAspAspArgLeuSer
 Thr-530
 539-ArgPheAsnIleArgTyrArgProAspProLysAsnAsnPro-552
 557-ValSerGlyLysHisArgSerArgGlyValGlu-567
 575-IleProLysLysLeuTyrLeu-581
 591-LysValValGluAspLysGluAsnProAspArgValGly-603
 607-AsnAsnThrSerAsnVal-612
 619-ArgTyrThrProThrGluAsnLeuTyr-627
 634-GlyThrGlyLysArgTyrGlyTyrAsnSerArgAsnLysGluValThrThr-650
 663-TrpAsnHisLysAsn-667
 678-LeuAsnGlnLysTyrTrpArgSerAspSerMetProGlyAsnProArgGlyTyrThrAla-697

Hydrophilic Regions - Hopp-Woods

24-AspThrGlnAspAsnGlyGlu-30
 43-GlyGlnSerAspThrSerVal-49
 57-AspGluAlaAlaValThrArg-63
 66-GlnLeuIleLysGluThrProGlnThr-74
 81-GlnLysAsnLysAsnTyrGly-87
 105-TyrAspMetArgGlyGluSerIlePhe-113
 117-PheGlnAlaAspAlaSerAspIleTyrArgAspGlyValArgGluSerGlyGlnValArgArgSerThrAla
 AsnIleGluArgValGluIleLeuLysGlyProSer-152
 175-LysGlnSerArgAsn-179
 208-LeuThrGlyGluValGlyArg-214
 220-SerGlyIleAspSerLysAsn-226
 235-ValLysLeuAspAsn-239
 251-AsnValGluArgThrProAspArgSerProThr-261
 278-HisArgAsnAspPheValLysAspLysLeuGln-288
 312-ThrAlaAlaGlnAspPhe-317
 324-SerGluAsnGlyAsnLeuIleLys-331
 339-ThrAspAsnLysThrLeu-344
 368-AspTyrSerArgGluHisArgAsnPro-376
 390-ProTyrAspArgAlaSer-395
 409-AsnArgHisLysAlaAspSer-415
 436-GlyArgTyrAspLys-440
 445-SerGluAsnLysLeuThrGlySerSerArgGlnTyrSer-457
 507-AlaAspProGluTyrThrArgGlnTyrGluThrGlyVal-519
 523-TrpLeuAspAspArgLeuSer-529
 544-TyrArgProAspProLysAsn-550
 559-GlyLysHisArgSerArgGlyValGlu-567
 591-LysValValGluAspLysGluAsnProAspArgValGly-603
 634-GlyThrGlyLysArgTyrGlyTyr-641
 643-SerArgAsnLysGluValThr-649
 686-AspSerMetProGlyAsnProArgGlyTyrThr-696
 762

AMPHI Regions - AMPHI

1-MetLysTrpLeuLeuAsnMetIleMetArgProIleLysPheSerMetValAsnThrLeuLeuPheIleValIle
 eCysSerSerPhePheAspLeuLeuValGlnLeuCysThrIleLeuPheHisSerGlnLysIleTyrPheIleThr
 LeuPheLeuLeuPheIlePheAsnPheValThrLysSerIleTyrMetAlaIleIleTyrProIleLeuTyrPheP
 heThrIleLysLysTyrTyrProTyrSerArgLysValIleIleLeuLeuSerLeuAlaLeuSerIleTyrPheSe

rPheMetAspPheTyrPhePheSerIleTyrSerAspAsnLeuSerTyrGluThrGluProLeuHisLeuTyrIle
ProIleIleIleAsnPhePheSerLeuLeuValSerAsnPheIleLeuSerPheIleAsnLys-147

Antigenic Index - Jameson-Wolf

1-MetLysTrpLeuLeuAsnMetIleMetArgProIleLysPheSerMetValAsnThrLeuLeuPheIleValIle
eCysSerSerPhePheAspLeuLeuValGlnLeuCysThrIleLeuPheHisSerGlnLysIleTyrPheIleThr
LeuPheLeuLeuPheIlePheAsnPheValThrLysSerIleTyrMetAlaIleIleTyrProIleLeuTyrPheP
heThrIleLysLysTyrTyrProTyrSerArgLysValIleIleLeuLeuSerLeuAlaLeuSerIleTyrPheSe
rPheMetAspPheTyrPhePheSerIleTyrSerAspAsnLeuSerTyrGluThrGluProLeuHisLeuTyrIle
ProIleIleIleAsnPhePheSerLeuLeuValSerAsnPheIleLeuSerPheIleAsnLys-147

Hydrophilic Regions - Hopp-Woods

1-MetLysTrpLeuLeuAsnMetIleMetArgProIleLysPheSerMetValAsnThrLeuLeuPheIleValIle
eCysSerSerPhePheAspLeuLeuValGlnLeuCysThrIleLeuPheHisSerGlnLysIleTyrPheIleThr
LeuPheLeuLeuPheIlePheAsnPheValThrLysSerIleTyrMetAlaIleIleTyrProIleLeuTyrPheP
heThrIleLysLysTyrTyrProTyrSerArgLysValIleIleLeuLeuSerLeuAlaLeuSerIleTyrPheSe
rPheMetAspPheTyrPhePheSerIleTyrSerAspAsnLeuSerTyrGluThrGluProLeuHisLeuTyrIle
ProIleIleIleAsnPhePheSerLeuLeuValSerAsnPheIleLeuSerPheIleAsnLys-147

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AMPHI Regions - AMPHI

1-MetThrLeuLeuAsnLeuMetIleMetGlnAspTyrGlyIleSerValCysLeuThrLeuThrProTyrLeuGln
HisGluLeuPheSerAlaMetLysSerTyrPheSerLysTyrIleLeuProValSerLeuPheThrLeuProLeu
SerLeuSerProSerValSerAlaPheThrLeuProGluAlaTrpArgAlaAlaGlnGlnHisSerAlaAspPheG
lnAlaSerHisTyrGlnArgAspAlaValArgAlaArgGlnGlnGlnAlaLysAlaAlaPheLeuProHisValSe
rAlaAsnAlaSerTyrGlnArgGlnProProSerIleSerSerThrArgGluThrGlnGlyTrpSerValGlnVal
GlyGlnThrLeuPheAspAlaAlaLysPheAlaGlnTyrArgGlnSerArgPheAspThrGlnAlaAlaGluGlnA
rgPheAspAlaAlaArgGluGluLeuLeuLysValAlaGluSerTyrPheAsnValLeuLeuSerArgAspTh
rValAlaAlaHisAlaAlaGluLysGluAlaTyrAlaGlnValArgGlnAlaGlnAlaLeuPheAsnLysGly
AlaAlaThrAlaLeuAspIleHisGluAlaLysAlaGlyTyrAspAsnAlaLeuAlaGlnGluIleAlaValLeuA
laGluLysGlnThrTyrGluAsnGlnLeuAsnAspTyrThrAspLeuAspSerLysGlnIleGluAlaIleAspTh
rAlaAsnLeuLeuAlaArgTyrLeuProLysLeuGluArgTyrSerLeuAspGluTrpGlnArgIleAlaLeuSer
AsnAsnHisGluTyrArgMetGlnGlnLeuAlaLeuGlnSerSerGlyGlnAlaLeuArgAlaAlaGlnAsnSerA
rgTyrProThrValSerAlaHisValGlyTyrGlnAsnAsnLeuTyrThrSerSerAlaGlnAsnAsnAspTyrHi
sTyrArgGlyLysGlyMetSerValGlyValGlnLeuAsnLeuProLeuTyrThrGlyGlyGluLeuSerGlyLys
IleHisGluAlaGluAlaGluTyrGlyAlaAlaGluAlaGlnLeuThrAlaThrGluArgHisIleLysLeuAlaV
alArgAlaSerTyrGlnGlnSerGlyAlaAlaArgTyrGlnIleMetAlaGlnGluArgValLeuGluSerSerA
rgLeuLysLeuLysSerThrGluThrGlyGlnGlnTyrGlyIleArgAsnArgLeuGluValIleArgAlaArgGln
GluValAlaGlnAlaGluGlnLysLeuAlaGlnAlaArgTyrLysPheMetLeuAlaTyrLeuArgLeuValLysG
luSerGlyLeuGlyLeuGluThrValPheAlaGlu-467

Antigenic Index - Jameson-Wolf

1-MetThrLeuLeuAsnLeuMetIleMetGlnAspTyrGlyIleSerValCysLeuThrLeuThrProTyrLeuGln
HisGluLeuPheSerAlaMetLysSerTyrPheSerLysTyrIleLeuProValSerLeuPheThrLeuProLeu
SerLeuSerProSerValSerAlaPheThrLeuProGluAlaTrpArgAlaAlaGlnGlnHisSerAlaAspPheG
lnAlaSerHisTyrGlnArgAspAlaValArgAlaArgGlnGlnGlnAlaLysAlaAlaPheLeuProHisValSe
rAlaAsnAlaSerTyrGlnArgGlnProProSerIleSerSerThrArgGluThrGlnGlyTrpSerValGlnVal
GlyGlnThrLeuPheAspAlaAlaLysPheAlaGlnTyrArgGlnSerArgPheAspThrGlnAlaAlaGlnA
rgPheAspAlaAlaArgGluGluLeuLeuLysValAlaGluSerTyrPheAsnValLeuLeuSerArgAspTh
rValAlaAlaHisAlaAlaGluLysGluAlaTyrAlaGlnValArgGlnAlaGlnAlaLeuPheAsnLysGly
AlaAlaThrAlaLeuAspIleHisGluAlaLysAlaGlyTyrAspAsnAlaLeuAlaGlnGluIleAlaValLeuA
laGluLysGlnThrTyrGluAsnGlnLeuAsnAspTyrThrAspLeuAspSerLysGlnIleGluAlaIleAspTh
rAlaAsnLeuLeuAlaArgTyrLeuProLysLeuGluArgTyrSerLeuAspGluTrpGlnArgIleAlaLeuSer
AsnAsnHisGluTyrArgMetGlnGlnLeuAlaLeuGlnSerSerGlyGlnAlaLeuArgAlaAlaGlnAsnSerA
rgTyrProThrValSerAlaHisValGlyTyrGlnAsnAsnLeuTyrThrSerSerAlaGlnAsnAsnAspTyrHi
sTyrArgGlyLysGlyMetSerValGlyValGlnLeuAsnLeuProLeuTyrThrGlyGlyGluLeuSerGlyLys

IleHisGluAlaGluAlaGlnTyrGlyAlaAlaGluAlaGlnLeuThrAlaThrGluArgHisIleLysLeuAlaValArgGlnAlaTyrThrGluSerGlyAlaAlaArgTyrGlnIleMetAlaGlnGluArgValLeuGluSerSerArgLeuLysLeuLysSerThrGluThrGlyGlnGlnTyrGlyIleArgAsnArgLeuGluValIleArgAlaArgGlnGluValAlaGlnAlaGluGlnLysLeuAlaGlnAlaArgTyrLysPheMetLeuAlaTyrLeuArgLeuValLysGluSerGlyLeuGlyLeuGluThrValPheAlaGlu-467

Hydrophilic Regions - Hopp-Woods

1-MetThrLeuLeuAsnLeuMetIleMetGlnAspTyrGlyIleSerValCysLeuThrLeuThrProTyrLeuGlnHisGluLeuPheSerAlaMetLysSerTyrPheSerLysTyrIleLeuProValSerLeuPheThrLeuProSerLeuSerProSerValSerAlaPheThrLeuProGluAlaTrpArgAlaAlaGlnHisSerAlaAspPheGlnAlaSerHisTyrGlnArgAspAlaValArgAlaArgGlnGlnGlnAlaLysAlaAlaPheLeuProHisValSerAlaAsnAlaSerTyrGlnArgGlnProProSerIleSerSerThrArgGluThrGlnGlyTrpSerValGlnValGlyGlnThrLeuPheAspAlaAlaLysPheAlaGlnTyrArgGlnSerArgPheAspThrGlnAlaGluGlnArgPheAspAlaAlaArgGluGluLeuLeuLysValAlaGluSerTyrPheAsnValLeuLeuSerArgAspThrValAlaAlaHisAlaAlaGluLysGluAlaTyrAlaGlnGlnValArgGlnAlaGlnAlaLeuPheAsnLysGlyAlaAlaThrAlaLeuAspIleHisGluAlaLysAlaGlyTyrAspAsnAlaLeuAlaGlnGluIleAlaValLeuAlaGluLysGlnThrTyrGluAsnGlnLeuAsnAspTyrThrAspLeuAspSerLysGlnIleGluAlaIleAspThrAlaAsnLeuLeuAlaArgTyrLeuProLysLeuGluArgTyrSerLeuAspGluTrpGlnArgIleAlaGluLeuSerAsnAsnHisGluTyrArgMetGlnGlnLeuAlaLeuGlnSerSerGlyGlnAlaLeuArgAlaAlaGlnAsnSerArgTyrProThrValSerAlaHisValGlyTyrGlnAsnAsnLeuTyrThrSerSerAlaGlnAsnAsnAspTyrHisTyrArgGlyLysGlyMetSerValGlyValGlnLeuAsnLeuProLeuTyrThrGlyGlyLeuLeuSerGlyLysIleHisGluAlaGluAlaGlnTyrGlyAlaAlaGluAlaGlnLeuThrAlaThrGluArgHisIleLysLeuAlaValArgGlnAlaTyrThrGlnSerGlyAlaAlaArgTyrGlnIleMetAlaGlnGluArgValLeuGluSerSerArgLeuLysLeuLysSerThrGluThrGlyGlnGlnTyrGlyIleArgAsnArgLeuGluValIleArgAlaArgGlnGluValAlaGlnAlaGluGlnLysLeuAlaGlnAlaArgTyrLysPheMetLeuAlaTyrLeuArgLeuValLysGluSerGlyLeuGlyLeuGluThrValPheAlaGlu-467

764

AMPHI Regions - AMPHI

1-MetPhePheSerAlaLeuLysSerPheLeuSerArgTyrIleThrValTrpArgAsnValTrpAlaValArgAspGlnLeuLysProProLysArgThrAlaGluGluGlnAlaPheLeuProAlaHisLeuGluLeuThrAspThrProValSerAlaAlaProLysTrpAlaAlaArgPheIleMetAlaPheAlaLeuLeuAlaLeuLeuTrpSerTrpPheGlyLysIleAspIleValAlaAlaAlaSerGlyLysThrValSerGlyGlyArgSerLysThrIleGlnProLeuGluThrAlaValLysAlaValHisValArgAspGlyGlnHisValLysGlnGlyLutThrLeuAlaGluLeuGluAlaValGlyThrAspSerAspValValGlnSerGluGlnAlaLeuGlnAlaAlaGlnLeuSerLysLeuArgTyrGluAlaValLeuAlaAlaLeuGluSerArgThrValProHisIleAspMetAlaGlnAlaArgSerLeuGlyLeuSerAspAlaAspValGlnSerAlaGlnValLeuAlaGlnHisGlnTyrGlnAlaTrpAlaAlaGlnAspAlaGlnLeuGlnSerAlaLeuArgGlyHisGlnAlaGluLeuGlnSerAlaLysAlaGlnGluGlnLysLeuValSerValGlyAlaIleGluGlnGlnLysThrAlaAspTyrArgArgLeuArgAlaAspAsnPheIleSerGluHisAlaPheLeuGluGlnGlnSerLysSerValSerAsnTrpAsnAspLeuGluSerThrArgGlyGlnMetArgGlnIleGlnAlaAlaIleAlaGlnAlaGluGlnAsnArgValLeuAsnThrGlnAsnLeuLysArgAspThrLeuAspAlaLeuArgGlnAlaAsnGluGlnIleAspGlnTyrArgGlyGlnThrAspLysAlaLysGlnArgGlnGlnLeuMetThrIleGlnSerProAlaAspGlyThrValGlnGlnLeuAlaThrTyrThrValGlyGlyValValGlnAlaAlaGlnLysMetMetValIleAlaProAspAspAspLysMetAspValGluValLeuValLeuAsnLysAspIleGlyPheValGluGlnGlyGlnAspAlaValValLysIleGluSerPheProTyrThrArgTyrGlyTyrLeuThrGlyLysValLysSerValSerHisAspAlaValSerHisGluGlnLeuGlyLeuValTyrThrAlaValValSerLeuAspLysHisThrLeuAsnIleAspGlyLysAlaValAsnLeuThrAlaGlyMetAsnValThrAlaGluIleLysThrGlyLysArgArgValLeuAspTyrLeuLeuSerProLeuGlnThrLysLeuAspGluSerPheArgGluArg-475

Antigenic Index - Jameson-Wolf

1-MetPhePheSerAlaLeuLysSerPheLeuSerArgTyrIleThrValTrpArgAsnValTrpAlaValArgAspGlnLeuLysProProLysArgThrAlaGluGluGlnAlaPheLeuProAlaHisLeuGluLeuThrAspThrProValSerAlaAlaProLysTrpAlaAlaArgPheIleMetAlaPheAlaLeuLeuAlaLeuLeuTrpSerTrpPheGlyLysIleAspIleValAlaAlaAlaSerGlyLysThrValSerGlyGlyArgSerLysThrIleGlnProLeuGluThrAlaValValLysAlaValHisValArgAspGlyGlnHisValLysGlnGlyLutThrLeuAlaGluLeuGluAlaValGlyThrAspSerAspValValGlnSerGluGlnAlaLeuGlnAlaAlaGlnLeuSerLysLeuArgTyrG

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luAlaValLeuAlaAlaLeuGluSerArgThrValProHisIleAspMetAlaGlnAlaArgSerLeuGlyLeuSe
rAspAlaAspValGlnSerAlaGlnValLeuAlaGlnHisGlnTyrGlnAlaTrpAlaAlaGlnAspAlaGlnLeu
GlnSerAlaLeuArgGlyHisGlnAlaGluLeuGlnSerAlaLysAlaGlnGluGlnLysLeuValSerValGlyA
laIleGluGlnGlnLysThrAlaAspTyrArgArgLeuArgAlaAspAsnPheIleSerGluHisAlaPheLeuG
luGlnGlnSerLysSerValSerAsnTrpAsnAspLeuGluSerThrArgGlyGlnMetArgGlnIleGlnAlaAla
IleAlaGlnAlaGluGlnAsnArgValLeuAsnThrGlnAsnLeuLysArgAspThrLeuAspAlaLeuArgGlnA
laAsnGluGlnIleAspGlnTyrArgGlyGlnThrAspLysAlaLysGlnArgGlnGlnLeuMetThrIleGlnSe
rProAlaAspGlyThrValGlnGluLeuAlaThrTyrThrValGlyGlyValValGlnAlaAlaGlnLysMetMet
ValIleAlaProAspAspAspLysMetAspValGluValLeuValLeuAsnLysAspIleGlyPheValGluGlnG
lyGlnAspAlaValValLysIleGluSerPheProTyrThrArgTyrGlyTyrLeuThrGlyLysValLysSerVa
lSerHisAspAlaValSerHisGluGlnLeuGlyLeuValTyrThrAlaValValSerLeuAspLysHisThrLeu
AsnIleAspGlyLysAlaValAsnLeuThrAlaGlyMetAsnValThrAlaGluIleLysThrGlyLysArgArgV
aLeuAspTyrLeuLeuSerProLeuGlnThrLysLeuAspGluSerPheArgGluArg-475

Hydrophilic Regions - Hopp-Woods

1-MetPheSerAlaLeuLysSerPheLeuSerArgTyrIleThrValTrpArgAsnValTrpAlaValArgAs
pGlnLeuLysProProLysArgThrAlaGluGluGlnAlaPheLeuProAlaHisLeuGluLeuThrAspThrPro
ValSerAlaAlaProLysTrpAlaAlaArgPheIleMetAlaPheAlaLeuLeuAlaLeuLeuTrpSerTrpPheG
lyLysIleAspIleValAlaAlaAlaSerGlyLysThrValSerGlyGlyArgSerLysThrIleGlnProLeuG
luThrAlaValValLysAlaValHisValArgAspGlyGlnHisValLysGlnGlyGluThrLeuAlaGluLeuGlu
AlaValGlyThrAspSerAspValValGlnSerGluGlnAlaLeuGlnAlaAlaGlnLeuSerLysLeuArgTyrG
luAlaValLeuAlaAlaLeuGluSerArgThrValProHisIleAspMetAlaGlnAlaArgSerLeuGlyLeuSe
rAspAlaAspValGlnSerAlaGlnValLeuAlaGlnHisGlnTyrGlnAlaTrpAlaAlaGlnAspAlaGlnLeu
GlnSerAlaLeuArgGlyHisGlnAlaGluLeuGlnSerAlaLysAlaGlnGluGlnLysLeuValSerValGlyA
laIleGluGlnGlnLysThrAlaAspTyrArgArgLeuArgAlaAspAsnPheIleSerGluHisAlaPheLeuG
luGlnGlnSerLysSerValSerAsnTrpAsnAspLeuGluSerThrArgGlyGlnMetArgGlnIleGlnAlaAla
IleAlaGlnAlaGluGlnAsnArgValLeuAsnThrGlnAsnLeuLysArgAspThrLeuAspAlaLeuArgGlnA
laAsnGluGlnIleAspGlnTyrArgGlyGlnThrAspLysAlaLysGlnArgGlnGlnLeuMetThrIleGlnSe
rProAlaAspGlyThrValGlnGluLeuAlaThrTyrThrValGlyGlyValValGlnAlaAlaGlnLysMetMet
ValIleAlaProAspAspAspLysMetAspValGluValLeuValLeuAsnLysAspIleGlyPheValGluGlnG
lyGlnAspAlaValValLysIleGluSerPheProTyrThrArgTyrGlyTyrLeuThrGlyLysValLysSerVa
lSerHisAspAlaValSerHisGluGlnLeuGlyLeuValTyrThrAlaValValSerLeuAspLysHisThrLeu
AsnIleAspGlyLysAlaValAsnLeuThrAlaGlyMetAsnValThrAlaGluIleLysThrGlyLysArgArgV
aLeuAspTyrLeuLeuSerProLeuGlnThrLysLeuAspGluSerPheArgGluArg-475
765

AMPHI Regions - AMPHI

36-SerAlaIleSerSerPheCys-42
45-LysIleIleHisThrTyr-50
59-ValIleGlyIleIleAsnGly-65
105-ArgPheLeuAsnArgGly-110
147-PheGlyLeuCysTyrPro-152

Antigenic Index - Jameson-Wolf

10-GlyAsnPheLysLysIleAlaThr-17
19-GlnGlyLeuAspArgLysTyr-25
76-ValLysAsnLysGlnLysPheLeu-83
106-PheLeuAsnArgGlyMetLys-112
132-LeuAsnGluGluGlyGlyTrpMet-139
160-LeuSerArgAspTyrLysHisIle-167

Hydrophilic Regions - Hopp-Woods

11-AsnPheLysLysIleAlaThr-17
19-GlnGlyLeuAspArgLys-24
76-ValLysAsnLysGlnLysPheLeu-83
133-AsnGluGluGlyGly-137

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162-ArgAspTyrLysHis-166
767

AMPHI Regions - AMPHI

1-MetLysLeuLysHisLeuLeuProLeuLeuLeuSerAlaValLeuSerAlaGlnAlaTyrAlaLeuThrGluGlyGluAspTyrLeuValLeuAspLysProIleProGlnGluGlnSerGlyLysIleGluValLeuGluPhePheGlyTyrPheCysValHisCysHisHisPheAspProLeuLeuLeuLysLeuGlyLysAlaLeuProSerAspAlaTyrLeuArgThrGluHisValValTrpGlnProGluMetLeuGlyLeuAlaArgMetAlaAlaValAsnLeuSerGlyLeuLysTyrGlnAlaAsnProAlaValPheLysAlaValTyrGluGlnLysIleArgLeuGluAsnArgSerValAlaGlyLysTrpAlaLeuSerGlnLysGlyPheAspGlyLysLysLeuMetArgAlaTyrAspSerProGluAlaAlaAlaAlaAlaLeuLysMetGlnLysLeuThrGluGlnTyrArgIleAspSerThrProThrValIleValGlyGlyLysTyrArgValIlePheAsnAsnGlyPheAspGlyGlyValHisThrIleLysGluLeuValAlaLysValArgGluGluArgLysArgGlnThrProAlaValGlnLys-214

Antigenic Index - Jameson-Wolf

1-MetLysLeuLysHisLeuLeuProLeuLeuLeuSerAlaValLeuSerAlaGlnAlaTyrAlaLeuThrGluGlyGluAspTyrLeuValLeuAspLysProIleProGlnGluGlnSerGlyLysIleGluValLeuGluPhePheGlyTyrPheCysValHisCysHisHisPheAspProLeuLeuLeuLysLeuGlyLysAlaLeuProSerAspAlaTyrLeuArgThrGluHisValValTrpGlnProGluMetLeuGlyLeuAlaArgMetAlaAlaValAsnLeuSerValAlaGlyLysTrpAlaLeuSerGlnLysGlyPheAspGlyLysLysLeuMetArgAlaTyrAspSerProGluAlaAlaAlaAlaAlaLeuLysMetGlnLysLeuThrGluGlnTyrArgIleAspSerThrProThrValIleValGlyGlyLysTyrArgValIlePheAsnAsnGlyPheAspGlyGlyValHisThrIleLysGluLeuValAlaLysValArgGluGluArgLysArgGlnThrProAlaValGlnLys-214

Hydrophilic Regions - Hopp-Woods

1-MetLysLeuLysHisLeuLeuProLeuLeuLeuSerAlaValLeuSerAlaGlnAlaTyrAlaLeuThrGluGlyGluAspTyrLeuValLeuAspLysProIleProGlnGluGlnSerGlyLysIleGluValLeuGluPhePheGlyTyrPheCysValHisCysHisHisPheAspProLeuLeuLeuLysLeuGlyLysAlaLeuProSerAspAlaTyrLeuArgThrGluHisValValTrpGlnProGluMetLeuGlyLeuAlaArgMetAlaAlaValAsnLeuSerGlyLeuLysTyrGlnAlaAsnProAlaValPheLysAlaValTyrGluGlnLysIleArgLeuGluAsnArgSerValAlaGlyLysTrpAlaLeuSerGlnLysGlyPheAspGlyLysLysLeuMetArgAlaTyrAspSerProGluAlaAlaAlaAlaAlaLeuLysMetGlnLysLeuThrGluGlnTyrArgIleAspSerThrProThrValIleValGlyGlyLysTyrArgValIlePheAsnAsnGlyPheAspGlyGlyValHisThrIleLysGluLeuValAlaLysValArgGluGluArgLysArgGlnThrProAlaValGlnLys-214

768

AMPHI Regions - AMPHI

23-ProGlnLysProValSerAlaAlaGlnThr-32
60-ProValAspGlnIleValArgArgIleHisGluAlaAla-72
93-LeuGlnGluLeuLysLysAlaGlyTyrThrAsnValAlaAsnHisGly-108

Antigenic Index - Jameson-Wolf

21-AlaAlaProGlnLysProValSer-28
42-ValArgSerGluGlnGluPheSerGluGlyHis-52
63-GlnIleValArgArgIleHisGluAlaAlaProAspLysAspThrPro-78
82-TyrCysArgSerGlyArgArgAlaGluAlaAlaLeuGlnGluLeuLysLysAlaGlyTyr-101
106-AsnHisGlyGlyTyrGluAspLeuLeuLysLysGlyMetLys-119

Hydrophilic Regions - Hopp-Woods

22-AlaProGlnLysProValSer-28
42-ValArgSerGluGlnGluPheSerGlu-50
63-GlnIleValArgArgIleHisGluAlaAlaProAspLysAspThrPro-78
84-ArgSerGlyArgArgAlaGluAlaAlaLeuGlnGluLeuLysLysAlaGly-100
109-GlyTyrGluAspLeuLeuLysLysGlyMetLys-119

769

AMPHI Regions - AMPHI

1-LeuIleMetValIlePheTyrPheCysGlyLysThrPheMetProAlaArgAsnArgTrpMetLeuLeuPro
HisLeuAlaAlaSerAlaAlaTyrAlaGluGluThrProArgGluProAspLeuArgSerArgProGluPheArgLeu
HisGluAlaGluValLysProIleAspArgGluLysValProGlyGlnValArgGluLysGlyLysValLeuGlnIle
AspGlyGluThrLeuLeuLysProLeuLeuSerArgAlaMetTyrSerAlaValValSerAsnAsnIle
IleAspGlyIleArgValIleLeuProIleTyrLeuGlnGlnAlaGlnIleAspLysMetLeuAlaLeuTyrAlaGln
GlyIleLeuAlaGlnAlaAspGlyArgValLysGluAlaIleIleSerHisTyrArgGluLeuIleAlaAlaGlnPro
spAlaProAlaValArgMetArgLeuAlaAlaLeuPheGluAsnArgGlnAsnGluAlaAlaAlaAspGlnPhe
AspArgGluLysAlaGluAsnLeuProProGlnLeuMetGluGlnValGluLeuTyrArgLysAlaArgGluArg
ArgAspAlaTrpLysValAsnGlyGlyPheSerValThrArgGluHisAsnIleAsnGlnAlaProLysArgGlnG
lnTyrGlyLysTrpThrPheProLysGlnValAspGlyThrAlaValAsnTyrArgGluGlyAlaGluLysTyr
pSerLeuLysAsnGlyTrpTyrThrAlaGlyGlyAspValSerGlyArgValTyrProGlyAsnLysLysPhe
AsnAspMetThrAlaGlyValSerGlyGlyIleGlyPheAlaAspArgArgLeuAspAlaGluAlaValPhe
IseGluArgArgThrTyrGlyAsnAlaTyrSerTyrThrAsnGlyAlaArgLeuTyrPheAsnArgTrpGlnThr
ProLysTrpGlnThrLeuSerSerAlaGluTrpGlyArgLeuLysAsnThrArgArgAlaArgSerAspAsnThr
HisLeuGlnIleSerAsnSerLeuValPheTyrArgAsnAlaGlnTyrTrpMetGlyGlyLeuAspPheTyrAl
rgGluArgAsnProAlaAspArgGlyAspAsnPheAsnArgTyrGlyLeuArgPheAlaTrpGlyGlnGluTrpG
yGlySerGlyLeuSerSerLeuArgLeuGlyAlaAlaLysArgHisTyrGluLysProGlyPhePheSerGly
PheLysGlyGluArgArgArgAspLysGluLeuAsnThrSerLeuSerLeuTrpHisArgAlaLeuHisPheLys
GlyIleThrProArgLeuThrLeuSerHisArgGluThrArgSerAsnAspValPheAsnGluTyrGluLysAsnAr
gAlaPheValGluPheAsnLysThrPhe-490

1-Leu1LeuMetVal1LePheYyzPhcCysGlyLysTrpPhcMetProAlaArgAsnArgTrpMetLeuLeuLeuPro
 10-LeuLeuAlaSerAlaAlaTrpAlaGluGluTrpProArgGluProAspLeuArgSerArgProGluPheArgLeu
 20-HisGluAlaGluValLysProIleAspArgGluLysValProGlyGlnValArgGluLysGlyLysValGluGlnI
 30-LeuAspGlyGluTrpLeuLeuLysAsnProGluLeuLeuSerArgAlaMetTyrSerAlaValValSerAsnAsnIle
 40-IleAlaGlyIleArgValIleLeuProIleTyrLeuGlnGlnAlaGlnIAspTyrMetLeuAlaLeuTyrAlaGln
 50-GlyIleLeuAlaGlnAlaAspGlyArgValLysGluAlaIleSerHisTyrArgGluLeuIleAlaAlaGlnPro
 60-splapProAlaValArgMetArgLeuAlaAlaAlaLeuLeuGluAsnArgGlnAsnGluAlaAlaAlaAspGlnPh
 70-eAspArgLeuLysAlaGluAsnLeuProProGlnLeuMetGluGlnValGluLeuTyrArgLysAlaLeuArgGlu
 80-ArgAspAlaTrpLysValAsnGlyGlyPheSerValTrpArgGluHisAsnIleAsnGlnAlaProLysArgGing
 90-IleTyrGlyLysTrpTrpPheProLysGlnValAspGlyTrpAlaValAsnTrpArgLeuGlyAlaGluLysLysTr
 100-pSerLeuLysAsnGlyTrpTrpTrpTrpAlaGlyGlyAspValSerGlyArgValTyrProGlyAsnLysLysPhe
 110-AsnAspMetThrAlaGlyValSerGlyGlyIleGlyPheAlaAspArgArgLysAspAlaGlyLeuAlaIlePheH

-320-

isGluArgArgThrTyrGlyAsnAspAlaTyrSerTyrThrAsnGlyAlaArgLeuTyrPheAsnArgTrpGlnThrProLysTrpGlnThrLeuSerSerAlaGluTrpGlyArgLeuLysAsnThrArgArgAlaArgSerAspAsnThrHisLeuGlnIleSerAsnSerLeuValPheTyrArgAsnAlaArgGlnTyrTrpMetGlyGlyLeuAspPheTyrArgGluArgAsnProAlaAspArgGlyAspAsnPheAsnArgTyrGlyLeuArgPheAlaTrpGlyGlnGluTrpGlyCysGlySerGlyLeuSerSerLeuLeuArgLeuGlyAlaAlaLysArgHisTyrGluLysProGlyPhePheSerGlyPheLysGlyGluArgArgArgAspLysGluLeuAsnThrSerLeuSerLeuTrpHisArgAlaLeuHisPheLysGlyIleThrProArgLeuThrLeuSerHisArgGluThrArgSerAsnAspValPheAsnGluTyrGluLysAsnArgAlaPheValGluPheAsnLysThrPhe-490

770

AMPHI Regions - AMPHI

1-MetAsnArgLeuLeuLeuLeuSerAlaAlaValLeuLeuThrAlaCysGlySerGlyGluThrAspLysIleGlyArgAlaSerThrValPheAsnIleLeuGlyLysAsnAspArgIleGluValGluGlyPheAspAspProAspValGlnGlyValAlaCysTyrIleSerTyrAlaLysLysGlyGlyLeuLysGluMetValAsnLeuGluGluAspAlaSerAspAlaSerValSerCysValGlnThrAlaSerSerIleSerPheAspGluThrAlaValArgLysProLysGluValPheLysHisGlyAlaSerPheAlaPheLysSerArgGlnIleValArgTyrTyrAspProLysArgLysThrPheAlaTyrLeuValTyrSerAspLysIleIleGlnGlySerProLysAsnSerLeuSerAlaValSerCysPheGlyGlyIleProGlnThrAspGlyValGlnAlaAspThrSerGlyAsnLeuLeuAlaGlyAlaCysMetIleSerAsnProIleGluAsnLeuAspLysArg-186

Antigenic Index - Jameson-Wolf

1-MetAsnArgLeuLeuLeuLeuSerAlaAlaValLeuLeuThrAlaCysGlySerGlyGluThrAspLysIleGlyArgAlaSerThrValPheAsnIleLeuGlyLysAsnAspArgIleGluValGluGlyPheAspAspProAspValGlnGlyValAlaCysTyrIleSerTyrAlaLysLysGlyGlyLeuLysGluMetValAsnLeuGluGluAspAlaSerAspAlaSerValSerCysValGlnThrAlaSerSerIleSerPheAspGluThrAlaValArgLysProLysGluValPheLysHisGlyAlaSerPheAlaPheLysSerArgGlnIleValArgTyrTyrAspProLysArgLysThrPheAlaTyrLeuValTyrSerAspLysIleIleGlnGlySerProLysAsnSerLeuSerAlaValSerCysPheGlyGlyIleProGlnThrAspGlyValGlnAlaAspThrSerGlyAsnLeuLeuAlaGlyAlaCysMetIleSerAsnProIleGluAsnLeuAspLysArg-186

Hydrophilic Regions - Hopp-Woods

1-MetAsnArgLeuLeuLeuLeuSerAlaAlaValLeuLeuThrAlaCysGlySerGlyGluThrAspLysIleGlyArgAlaSerThrValPheAsnIleLeuGlyLysAsnAspArgIleGluValGluGlyPheAspAspProAspValGlnGlyValAlaCysTyrIleSerTyrAlaLysLysGlyGlyLeuLysGluMetValAsnLeuGluGluAspAlaSerAspAlaSerValSerCysValGlnThrAlaSerSerIleSerPheAspGluThrAlaValArgLysProLysGluValPheLysHisGlyAlaSerPheAlaPheLysSerArgGlnIleValArgTyrTyrAspProLysArgLysThrPheAlaTyrLeuValTyrSerAspLysIleIleGlnGlySerProLysAsnSerLeuSerAlaValSerCysPheGlyGlyIleProGlnThrAspGlyValGlnAlaAspThrSerGlyAsnLeuLeuAlaGlyAlaCysMetIleSerAsnProIleGluAsnLeuAspLysArg-186

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AMPHI Regions - AMPHI

1-MetAspLeuLeuSerValPheHisLysTyrArgLeuLysTyrAlaValAlaValLeuThrIleLeuLeuLeuAlaAlaValGlyLeuHisAlaSerValTyrArgThrPheThrProGluAsnIleArgSerArgLeuGlnSerIleAlaHisThrHisArgLysIleSerPheAspAlaAspSerGlnLysArgLeuLeuProArgProThrValIleLeuLysAsnLeuThrIleThrGluProGlyGlyAspGlnThrAlaValSerValGlnGluThrLysIleGlyLeuSerTrpLysAsnLeuTrpSerAspGlnIleGlnIleGluLysTrpValValSerSerAlaGluLeuAlaLeuThrArgAspGlyLysGlyValTrpAsnIleGlnAspLeuIleAspSerGlnLysArgGlnAlaSerValAsnArgIleIleValGluAsnSerThrValArgLeuAsnPheLeuGlnGluGlnLeuIleLeuLysGluIleAsnLeuAsnLeuGlnSerProAspSerSerGlyGlnProPheGluSerSerGlyIleLeuValTrpGlyLysLeuSerValProTrpLysSerArgGlyLeuPheLeuSerAsnGlyIleGlyProProGluIleSerProPheHisPheGluAlaSerThrSerLeuAspGlyIleHisGlyIleThrIleSerThrThrGlySerProSerValArgPheAsnAlaGlyGlyAlaAspAlaAlaGlyLeuGlyLeuArgAlaAspThrSerPheArgAsnLeuHisLeuThrAlaGlnIleProAlaLeuAlaLeuArgAsnAsnSerIleLysIleGluThrValAsnGlyAlaPheThrAlaGlyGlyGluTyrAlaArgTrpAspGlySerPheLysLeuAspLysAlaAsnLeuHisSerGlyIleAlaAsnIleGlyAsnAlaGluIleSerGlySerPheThrProArgHisGlnThrAlaAsnPheSerLeuAsnSerProLeuValTrpThrGluAsnLysGlyLeuAspAlaProArgLeuTyrValSerThrLeuGlnAspThrValAsnArgLeuProGlnProArgPheIleSerArgLeuAspGlySerLeuSerV

alProAsnLeuGlnAsnTrpAsnAlaGluLeuAsnGlyThrPheAspArgGlnThrValAlaAlaLysPheArgTyr
rThrHisGluAspAlaProHisLeuGluAlaAlaValAlaLeuGlnLysLeuAsnLeuThrProTyrLeuAspAsp
ValArgGlnGlnAsnGlyLysIlePheProAspThrLeuAlaLysLeuSerGlyAspIleGluAlaHisLeuLysI
leGlyLysValGlnLeuProGlyLeuGlnLeuAspAspMetGluThrTyrLeuHisAlaAspLysGlyHisIleAl
aLeuSerArgPheLysSerGlyLeuTyrGlyGlyHisThrGluGlyGlyIleSerIleAlaAsnThrArgProAla
ThrTyrArgLeuGlnGlnAsnAlaSerAsnIleGlnIleGlnProLeuLeuGlnAspLeuPheGlyPheHisSerP
heSerGlyAsnGlyAspAlaValIleAspLeuThrAlaGlyGlyGluThrArgLysGluLeuIleArgSerLeuGln
nGlySerLeuSerLeuAsnIleSerAsnGlyAlaTrpHisGlyIleAspMetAspAsnIleLeuLysAsnGlyIle
SerGlyLysThrAlaAspAsnAlaAlaProSerThrProPheHisArgPheThrLeuAsnSerGluIleSerAspG
lyIleSerArgHisIleAspThrGluLeuPheSerAspSerLeuTyrValThrSerAsnGlyTyrThrAsnLeuAs
pThrGlnGluLeuSerGluAspValLeuIleArgAsnAlaValHisProLysAsnLysProIleProLeuLysIle
ThrGlyThrValAspLysProSerIleThrValAspTyrGlyArgLeuThrGlyGlyIleAsnSerArgLysGluL
ysGlnLysIleLeuGluAspThrLeuLeuGluGlnTrpGlnTrpLeuLysProLysGluProAla-705

Antigenic Index - Jameson-Wolf

1-MetAspLeuLeuSerValPheHisLysTyrArgLeuLysTyrAlaValAlaValLeuThrIleLeuLeuLeuAl
aAlaValGlyLeuHisAlaSerValTyrArgThrPheThrProGluAsnIleArgSerArgLeuGlnGlnSerIle
AlaHisThrHisArgLysIleSerPheAspAlaAspIleGlnArgArgLeuProArgProThrValIleLeuL
ysAsnLeuThrIleThrGluProGlyGlyAspGlnThrAlaValSerValGlnGluThrLysIleGlyLeuSerTr
pLysAsnLeuTrpSerAspGlnIleGlnIleGluLysTrpValValSerSerAlaGluLeuAlaLeuThrArgAsp
GlyLysGlyValTrpAsnIleGlnAspLeuIleAspSerGlnLysArgGlnAlaSerValAsnArgIleIleValG
luAsnSerThrValArgLeuAsnPheLeuGlnGluGlnLeuIleLeuLysGluIleAsnLeuAsnLeuGlnSerPr
oAspSerSerGlyGlnProPheGluSerSerGlyIleLeuValTrpGlyLysLeuSerValProTrpLysSerArg
GlyLeuPheLeuSerAsnGlyIleGlyProProGluIleSerProPheHisPheGluAlaSerThrSerLeuAspG
lyHisGlyIleThrIleSerThrThrGlySerProSerValArgPheAsnAlaGlyGlyAlaAspAlaAlaGlyLe
uGlyLeuArgAlaAspThrSerPheArgAsnLeuHisLeuThrAlaGlnIleProAlaLeuAlaLeuArgAsnAsn
SerIleLysIleGluThrValIleAsnGlyAlaPheThrAlaGlyGlyGluTyrAlaArgTrpAspGlySerPheLysI
leAspLysAlaAsnLeuHisSerGlyIleAlaAsnIleGlyAsnAlaGluIleSerArgThrSerPheLysThrProAr
ghisGlnThrAsnPheSerLeuAsnSerProLeuValTrpThrGluAsnLysGlyLeuAspAlaProArgLeuTyr
ValSerThrLeuGlnAspThrValIleAsnArgLeuProGlnProArgPheIleSerArgLeuAspGlySerLeuSerV
alProAsnLeuGlnAsnTrpAsnAlaGluLeuAsnGlyThrPheAspArgGlnThrValAlaAlaLysPheArgTy
rThrHisGluAspAlaProHisLeuGluAlaAlaValAlaLeuGlnLysLeuAsnLeuThrProTyrLeuAspAsp
ValArgGlnGlnAsnGlyLysIlePheProAspThrLeuAlaLysLeuSerGlyAspIleGluAlaHisLeuLysI
leGlyLysValGlnLeuProGlyLeuGlnLeuAspAspMetGluThrTyrLeuHisAlaAspLysGlyHisIleAl
aLeuSerArgPheLysSerGlyLeuTyrGlyGlyHisThrGluGlyGlyIleSerIleAlaAsnThrArgProAla
ThrTyrArgLeuGlnGlnAsnAlaSerAsnIleGlnIleGlnProLeuLeuGlnAspLeuPheGlyPheHisSerP
heSerGlyAsnGlyAspAlaValIleAspLeuThrAlaGlyGlyGluThrArgLysGluLeuIleArgSerLeuGln
nGlySerLeuSerLeuAsnIleSerAsnGlyAlaTrpHisGlyIleAspMetAspAsnIleLeuLysAsnGlyIle
SerGlyLysThrAlaAspAsnAlaAlaProSerThrProPheHisArgPheThrLeuAsnSerGluIleSerAspG
lyIleSerArgHisIleAspThrGluLeuPheSerAspSerLeuTyrValThrSerAsnGlyTyrThrAsnLeuAs
pThrGlnGluLeuSerGluAspValLeuIleArgAsnAlaValHisProLysAsnLysProIleProLeuLysIle
ThrGlyThrValAspLysProSerIleThrValAspTyrGlyArgLeuThrGlyGlyIleAsnSerArgLysGluL
ysGlnLysIleLeuGluAspThrLeuLeuGluGlnTrpGlnTrpLeuLysProLysGluProAla-705

Hydrophilic Regions - Hopp-Woods

1-MetAspLeuLeuSerValPheHisLysTyrArgLeuLysTyrAlaValAlaValLeuThrIleLeuLeuLeuAl
aAlaValGlyLeuHisAlaSerValTyrArgThrPheThrProGluAsnIleArgSerArgLeuGlnGlnSerIle
AlaHisThrHisArgLysIleSerPheAspAlaAspIleGlnArgArgLeuLeuProArgProThrValIleLeuL
ysAsnLeuThrIleThrGluProGlyGlyAspGlnThrAlaValSerValGlnGluThrLysIleGlyLeuSerTr
pLysAsnLeuTrpSerAspGlnIleGlnIleGluLysTrpValValSerSerAlaGluLeuAlaLeuThrArgAsp
GlyLysGlyValTrpAsnIleGlnAspLeuIleAspSerGlnLysArgGlnAlaSerValAsnArgIleIleValG
luAsnSerThrValArgLeuAsnPheLeuGlnGluGlnLeuIleLeuLysGluIleAsnLeuAsnLeuGlnSerPr
oAspSerSerGlyGlnProPheGluSerSerGlyIleLeuValTrpGlyLysLeuSerValProTrpLysSerArg
GlyLeuPheLeuSerAsnGlyIleGlyProProGluIleSerProPheHisPheGluAlaSerThrSerLeuAspG
lyHisGlyIleThrIleSerThrThrGlySerProSerValArgPheAsnAlaGlyGlyAlaAspAlaAlaGlyLe

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uGlyLeuArgAlaAspThrSerPheArgAsnLeuHisLeuThrAlaGlnIleProAlaLeuAlaLeuArgAsnAsnSerIleLysIleGluThrValAsnGlyAlaPheThrAlaGlyGlyGluTyrAlaArgTrpAspGlySerPheLysLeuAspLysAlaAsnLeuHisSerGlyIleAlaAsnIleGlyAsnAlaGluIleSerGlySerPheLysThrProArgHisGlnThrAsnPheSerLeuAsnSerProLeuValTrpThrGluAsnLysGlyLeuAspAlaProArgLeuTyrValSerThrLeuGlnAspThrValAsnArgLeuProGlnProArgPheIleSerArgLeuAspGlySerLeuSerValProAsnLeuGlnAsnTrpAsnAlaGluLeuAsnGlyThrPheAspArgGlnThrValAlaAlaLysPheArgTyrrThrHisGluAspAlaProHisLeuGluAlaAlaValAlaLeuGlnLysLeuAsnLeuThrProTyrLeuAspAspValArgGlnGlnAsnGlyLysIlePheProAspThrLeuAlaLysLeuSerGlyAspIleGluAlaHisLeuLysIleGlyLysValGlnLeuProGlyLeuGlnLeuAspAspMetGluThrTyrLeuHisAlaAspLysGlyHisIleAlaLeuSerArgPheLysSerGlyLeuTyrGlyGlyHisThrGluGlyGlyIleSerIleAlaAsnThrArgProAlaThrTyrArgLeuGlnGlnAsnAlaSerAsnIleGlnIleGlnProLeuLeuGlnAspLeuPheGlyPheHisSerPheSerGlyAsnGlyAspAlaValIleAspLeuThrAlaGlyGlyGluThrArgLysGluLeuIleArgSerLeuGlnGlySerLeuSerLeuAsnIleSerAsnGlyAlaTrpHisGlyIleAspMetAspAsnIleLeuLysAsnGlyIleSerGlyLysThrAlaAspAsnAlaAlaProSerThrProPheHisArgPheThrLeuAsnSerGluIleSerAspGlyIleSerArgHisIleAspThrGluLeuPheSerAspSerLeuTyrValThrSerAsnGlyTyrThrAsnLeuAspThrGlnGluLeuSerAspValValLeuIleArgAsnAlaValHisProLysAsnLysProIleProLeuLysIleThrGlyThrValAspLysProSerIleThrValAspTyrGlyArgLeuThrGlyGlyIleAsnSerArgLysGluLysGlnLysIleLeuGluAspThrLeuLeuGluGlnTrpGlnTrpLeuLysProLysGluProAla-705

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AMPHI Regions - AMPHI

1-MetPheGlyAlaValLeuArgIleAspAlaAspCysLeuGlnIleIleValAlaCysLysLeuPheGlnIleValAlaTyrGlyPheAlaAlaLeuValGluGlyGluPheHisGluPheGlyLysMetLeuGluIleValArgLeuAlaAspAlaValPheHisArgAsnHisThrAspAspGlyGlyIleHisPheArgArgArgValGluArgPheGlyArgTyrValAsnGlnHisPheHisIleGluLysIleLeuGlnHisHisAlaGlnAlaAlaValValAlaPheArgArgGlyAsnHisThrLeuAspHisPhePheLeuGlnHisLysValHisIleAspAspIleValArgHisLeuArgGlnLeuGluGlnLysArgCysGlyAsnValValArgGluValAlaAspAspPheLeuPheAlaCysAspAlaValGluIleLysLeuGlnTyrIleAlaPheValAsnHisGlnPheIleArgLysArgGlnArgPheGlnThrAlaTyrAspValAlaValAspPheAspAsnValGlnAlaValGlnLeuPheArgGlnArgPheGlyAsnArgArgGlnThrArgAlaAspPheAsnHisAspIleIleArgLeuArgAlaHisGlyValAspAsnIleAlaAspAsnProArgValLeuGlnLysIleLeuProGluThrLeuAlaGlyPheValPhePheHisArgValSerPheSerValGluThrProProPheArgAlaValGluSerAspSerIleTrpGluGlyArgAsnSerPheGlnIleArgMetAlaHisArgAlaValLeuTyrValSerSerCysValLeuLysHisLysCysValTyrSerIleArgLeuMetSerAlaLeu-298

Antigenic Index - Jameson-Wolf

1-MetPheGlyAlaValLeuArgIleAspAlaAspCysLeuGlnIleIleValAlaCysLysLeuPheGlnIleValAlaTyrGlyPheAlaAlaLeuValGluGlyGluPheHisGluPheGlyLysMetLeuGluIleValArgLeuAlaAspAlaValPheHisArgAsnHisThrAspAspGlyGlyIleHisPheArgArgArgValGluArgPheGlyArgTyrValAsnGlnHisPheHisIleGluLysIleLeuGlnHisHisAlaGlnAlaAlaValValAlaPheArgArgGlyAsnHisThrLeuAspHisPhePheLeuGlnHisLysValHisIleAspAspIleValArgHisLeuArgGlnLeuGluGlnLysArgCysGlyAsnValValArgGluValAlaAspAspPheLeuPheAlaCysAspAlaValGluIleLysLeuGlnTyrIleAlaPheValAsnHisGlnPheIleArgLysArgGlnArgPheGlnThrAlaTyrAspValAlaValAspPheAspAsnValGlnAlaValGlnLeuPheArgGlnArgPheGlyAsnArgArgGlnThrArgAlaAspPheAsnHisAspIleIleArgLeuArgAlaHisGlyValAspAsnIleAlaAspAsnProArgValLeuGlnLysIleLeuProGluThrLeuAlaGlyPheValPhePheHisArgValSerPheSerValGluThrProProPheArgAlaValGluSerAspSerIleTrpGluGlyArgAsnSerPheGlnIleArgMetAlaHisArgAlaValLeuTyrValSerSerCysValLeuLysHisLysCysValTyrSerIleArgLeuMetSerAlaLeu-298

Hydrophilic Regions - Hopp-Woods

1-MetPheGlyAlaValLeuArgIleAspAlaAspCysLeuGlnIleIleValAlaCysLysLeuPheGlnIleValAlaTyrGlyPheAlaAlaLeuValGluGlyGluPheHisGluPheGlyLysMetLeuGluIleValArgLeuAlaAspAlaValPheHisArgAsnHisThrAspAspGlyGlyIleHisPheArgArgArgValGluArgPheGlyArgTyrValAsnGlnHisPheHisIleGluLysIleLeuGlnHisHisAlaGlnAlaAlaValValAlaPheArgArgGlyAsnHisThrLeuAspHisPhePheLeuGlnHisLysValHisIleAspAspIleValArgHisLeuArgGlnLeuGluGlnLysArgCysGlyAsnValValArgGluValAlaAspAspPheLeuPheAlaCysAspAlaValGluIleLysLeuGlnTyrIleAlaPheValAsnHisGlnPheIleArgLysArgGlnArgPheGlnThrAlaTyrAspValAlaValAspPheAspAsnValGlnAlaValGlnLeuPheArgGlnArgPheGlyAsnArgArgGlnThrArgAlaAspPheAsnHisAspIleIleArgLeuArgAlaHisGlyValAspAsnIleAlaAspAsnProArgValLeuGlnLysIleLeuProGluThrLeuAlaGlyPheValPhePheHisArgValSerPheSerValGluThrProProPheArgAlaValGluSerAspSerIleTrpGluGlyArgAsnSerPheGlnIleArgMetAlaHisArgAlaValLeuTyrValSerSerCysValLeuLysHisLysCysValTyrSerIleArgLeuMetSerAlaLeu-298

lAlaValAspPheAspAsnValGlnAlaValGlnLeuPheArgGlnArgPheGlyAsnArgArgGlnThrArgAla
AspPheAsnHisAspIleIleArgLeuArgAlaHisGlyValAspAsnIleAlaAspAsnProArgValLeuGlnL
ysIleLeuProGluThrLeuAlaGlyPheValPhePheHisArgValSerPheSerValGluThrProProPheAr
gAlaValGluSerAspSerIleTrpGluGlyArgAsnSerPheGlnIleArgMetAlaHisArgAlaValLeuTyr
ValSerSerCysValLeuLysHisLysCysValTyrSerIleArgLeuMetSerAlaLeu-298

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AMPHI Regions - AMPHI

1-MetGlyLeuGlyAlaThrThrPheValGlySerGlyAlaIleGlyGlyGlyLeuCysSerThrGlyIleGlyCy
sAlaAlaGlyGlyLeuIleAlaThrAlaGlyMetThrGlyGlyTyrThrGlnAlaSerGluGlySerArgGlnLeu
PheGlyThrTyrGlnSerAspPheGlyLysLysValValLeuSerLeuGlyThrProIleGluTyrGluSerProL
euValSerAspAlaLysAsnLeuAlaValTrpGlyLeuGluThrLeuIleThrArgLysLeuGlyAsnLeuAlaTh
rGlyValLysThrSerLeuThrProLysThrAlaAspValGlnArgAsnIleLeuSerGlnSerGluValGlyIle
LysTrpGlyLysGlyIleGluGlyGlnGlyMetProTrpGluAspTyrValGlyLysGlyLeuSerAlaAsnAlaA
rgLeuProLysAsnPheLysThrPheAspTyrPheAspArgGlyThrGlyThrAlaIleSerAlaLysThrLeuAs
pThrGlnThrThrAlaArgLeuSerLysProGluGlnLeuTyrSerThrMetLysGlyTyrIleAspLysThrAla
AsnPheLysSerTyrGluLeuSerGluValProLeuArgAlaAspMetIleLysGlnArgGluIleHisLeuAlaI
leProAlaGlnThrAsnLysGluGlnArgLeuGlnLeuGlnArgValValGluTyrGlyLysSerGlnAsnIleTh
rValLysIleThrGluIleGlu-260

Antigenic Index - Jameson-Wolf

1-MetGlyLeuGlyAlaThrThrPheValGlySerGlyAlaIleGlyGlyGlyLeuCysSerThrGlyIleGlyCy
sAlaAlaGlyGlyLeuIleAlaThrAlaGlyMetThrGlyGlyTyrThrGlnAlaSerGluGlySerArgGlnLeu
PheGlyThrTyrGlnSerAspPheGlyLysLysValValLeuSerLeuGlyThrProIleGluTyrGluSerProL
euValSerAspAlaLysAsnLeuAlaValTrpGlyLeuGluThrLeuIleThrArgLysLeuGlyAsnLeuAlaTh
rGlyValLysThrSerLeuThrProLysThrAlaAspValGlnArgAsnIleLeuSerGlnSerGluValGlyIle
LysTrpGlyLysGlyIleGluGlyGlnGlyMetProTrpGluAspTyrValGlyLysGlyLeuSerAlaAsnAlaA
rgLeuProLysAsnPheLysThrPheAspTyrPheAspArgGlyThrGlyThrAlaIleSerAlaLysThrLeuAs
pThrGlnThrThrAlaArgLeuSerLysProGluGlnLeuTyrSerThrMetLysGlyTyrIleAspLysThrAla
AsnPheLysSerTyrGluLeuSerGluValProLeuArgAlaAspMetIleLysGlnArgGluIleHisLeuAlaI
leProAlaGlnThrAsnLysGluGlnArgLeuGlnLeuGlnArgValValGluTyrGlyLysSerGlnAsnIleTh
rValLysIleThrGluIleGlu-260

Hydrophilic Regions - Hopp-Woods

1-MetGlyLeuGlyAlaThrThrPheValGlySerGlyAlaIleGlyGlyGlyLeuCysSerThrGlyIleGlyCy
sAlaAlaGlyGlyLeuIleAlaThrAlaGlyMetThrGlyGlyTyrThrGlnAlaSerGluGlySerArgGlnLeu
PheGlyThrTyrGlnSerAspPheGlyLysLysValValLeuSerLeuGlyThrProIleGluTyrGluSerProL
euValSerAspAlaLysAsnLeuAlaValTrpGlyLeuGluThrLeuIleThrArgLysLeuGlyAsnLeuAlaTh
rGlyValLysThrSerLeuThrProLysThrAlaAspValGlnArgAsnIleLeuSerGlnSerGluValGlyIle
LysTrpGlyLysGlyIleGluGlyGlnGlyMetProTrpGluAspTyrValGlyLysGlyLeuSerAlaAsnAlaA
rgLeuProLysAsnPheLysThrPheAspTyrPheAspArgGlyThrGlyThrAlaIleSerAlaLysThrLeuAs
pThrGlnThrThrAlaArgLeuSerLysProGluGlnLeuTyrSerThrMetLysGlyTyrIleAspLysThrAla
AsnPheLysSerTyrGluLeuSerGluValProLeuArgAlaAspMetIleLysGlnArgGluIleHisLeuAlaI
leProAlaGlnThrAsnLysGluGlnArgLeuGlnLeuGlnArgValValGluTyrGlyLysSerGlnAsnIleTh
rValLysIleThrGluIleGlu-260

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AMPHI Regions - AMPHI

1-MetLysIleLysLeuProLeuPheIleIleTrpLeuSerValSerAlaSerCysAlaSerValSerProValPr
oAlaGlySerGlnThrGluMetSerThrArgGluAsnAlaSerAspGlyIleProTyrProValProThrLeuGln
AspArgLeuAspTyrLeuGluGlyLysIleValArgLeuSerAsnGluValGluThrLeuAsnGlnLysValLysA
laLeuGluHisAlaLysThrHisSerSerGlyArgAlaTyrValGlnLysLeuAspAspArgLysLeuLysGluHi
sTyrLeuAsnThrGluGlyGlySerAlaSerAlaHisThrValGluThrAlaGlnAsnLeuTyrAsnGlnAlaLeu
LysHisTyrLysSerGlyLysPheSerAlaAlaAlaSerLeuLeuLysGlyAlaAspGlyGlyAspGlyGlySerI
leAlaGlnArgSerMetTyrLeuLeuLeuGlnSerArgAlaArgMetGlyAsnCysGluSerValIleGluIleGl
yGlyArgTyrAlaAsnArgPheLysAspSerProThrAlaProGluAlaMetPheLysIleGlyGluCysGlnTyr

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ArgLeuGlnGlnLysAspIleAlaArgAlaThrTrpArgSerLeuIleGlnThrTyrProGlySerProAlaAlaLysArgAlaAlaAlaValArgLysArg-237

Antigenic Index - Jameson-Wolf

1-MetLysIleLysLeuProLeuPheIleIleTrpLeuSerValSerAlaSerCysAlaSerValSerProValProAlaGlySerGlnThrGluMetSerThrArgGluAsnAlaSerAspGlyIleProTyrProValProThrLeuGlnAspArgLeuAspTyrLeuGluGlyLysIleValArgLeuSerAsnGluValGluThrLeuAsnGlyLysValLysAlaLeuGluHisAlaLysThrHisSerSerGlyArgAlaTyrValGlnLysLeuAspArgLysLeuLysGluHisTyrLeuAsnThrGluGlyGlySerAlaSerAlaHisThrValGluThrAlaGlnAsnLeuTyrAsnGlnAlaLeuLysHisTyrLysSerGlyLysPheSerAlaAlaAlaSerLeuLeuLysGlyAlaAspGlyGlyAspGlyGlySerIleAlaGlnArgSerMetTyrLeuLeuLeuGlnSerArgAlaArgMetGlyAsnCysGluSerValIleGluIleGlyGlyArgTyrAlaAsnArgPheLysAspSerProThrAlaProGluAlaMetPheLysIleGlyGluCysGlnTyrArgLeuGlnGlnLysAspIleAlaArgAlaThrTrpArgSerLeuIleGlnThrTyrProGlySerProAlaAlaLysArgAlaAlaAlaValArgLysArg-237

Hydrophilic Regions - Hopp-Woods

1-MetLysIleLysLeuProLeuPheIleIleTrpLeuSerValSerAlaSerCysAlaSerValSerProValProAlaGlySerGlnThrGluMetSerThrArgGluAsnAlaSerAspGlyIleProTyrProValProThrLeuGlnAspArgLeuAspTyrLeuGluGlyLysIleValArgLeuSerAsnGluValGluThrLeuAsnGlyLysValLysAlaLeuGluHisAlaLysThrHisSerSerGlyArgAlaTyrValGlnLysLeuAspArgLysLeuLysGluHisTyrLeuAsnThrGluGlyGlySerAlaSerAlaHisThrValGluThrAlaGlnAsnLeuTyrAsnGlnAlaLeuLysHisTyrLysSerGlyLysPheSerAlaAlaAlaSerLeuLeuLysGlyAlaAspGlyGlyAspGlyGlySerIleAlaGlnArgSerMetTyrLeuLeuLeuGlnSerArgAlaArgMetGlyAsnCysGluSerValIleGluIleGlyGlyArgTyrAlaAsnArgPheLysAspSerProThrAlaProGluAlaMetPheLysIleGlyGluCysGlnTyrArgLeuGlnGlnLysAspIleAlaArgAlaThrTrpArgSerLeuIleGlnThrTyrProGlySerProAlaAlaLysArgAlaAlaAlaValArgLysArg-237

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AMPHI Regions - AMPHI

10-GluAlaAlaAlaGluVal-15
44-GlyAsnGlnThrCysSerArgTyrSerAsn-53
89-LysGlnAlaValThr-93
103-ThrGlnAlaTyrAsnGluMetThrLysSerVal-113
166-PheAlaArgThrGlyLysLeu-172
174-GlySerPheAspLeuPheAlaSerVal-182
253-ProSerGluAlaPheAspLeuProGluGlySerThr-264
320-PheLeuArgPheTrpGlnAlaThrArgGlyIle-330

Antigenic Index - Jameson-Wolf

1-MetAlaArgArgSerLysThrPheGluGluAlaAlaAlaGluValGluGluArgPheGlyHisArgGlyIleLys-25
30-GluGlyThrAlaLysProCysVal-37
39-AsnCysProLysHisGlyAsnGlnThrCysSerArgTyrSer-52
57-GlySerSerTrpGlyCysProSerCysGlyAsnGluGlnAlaAla-71
77-ThrLeuArgLysAsnHisIle-83
95-MetThrLysGlnGluArgIleThr-102
123-AspValGlnGlyAspThrThrIle-130
134-HisThrHisThrHisAsnHisSerAspAlaAspGlyLysAlaLeuSer-149
152-LeuThrProArgProLeuLeuSerAspArgGlnAla-163
167-AlaArgThrGlyLysLeuThrGly-174
194-MetProAspThrSerMet-199
201-ProValIleGluLysGlyAsp-207
213-ProArgMetCysProAlaAspGluAspIleAla-223
226-GluLeuSerAspLysArgLeuVal-233
248-TyrGlnThrGlyArgProSerGluAlaPheAspLeuProGluGlySerThr-264
270-LeuGluSerLysAsnGlyLeuCysProProHisArgGlnGluGlyVal-285

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301-SerAlaSerLysThrSerCysThrArgProThrAlaAlaArgLysSerAla-317
 326-AlaThrArgGlyIleProLysThrArgSerTrpArgAsnProAsnAsnAla-342

Hydrophilic Regions - Hopp-Woods

1-MetAlaArgArgSerLysThrPheGluGluAlaAlaAlaGluValGluGluArgPheGlyHisArgGlyIleLeu
 s-25
 65-CysGlyAsnGluGlnAlaAla-71
 77-ThrLeuArgLysAsnHisIle-83
 96-ThrLysGlnGluArgIleThr-102
 139-AsnHisSerAspAlaAspGlyLysAlaLeuSer-149
 157-LeuLeuSerAspArgGlnAla-163
 168-ArgThrGlyLysLeu-172
 202-ValIleGluLysGlyAsp-207
 213-ProArgMetCysProAlaAspGluAspIleAla-223
 226-GluLeuSerAspLysArgLeuVal-233
 251-GlyArgProSerGluAlaPheAspLeuProGlu-261
 270-LeuGluSerLysAsnGlyLeu-276
 280-HisArgGlnGluGlyVal-285
 303-SerLysThrSerCysThrArgProThrAlaAlaArgLysSerAla-317
 328-ArgGlyIleProLysThrArgSerTrpArgAsn-338

900-2**AMPHI Regions - AMPHI**

9-ValValAlaPheAlaArgPhe-15
 36-ValGlyLysHisPheArgLysPheHisArgPheArgArgArgGlyGlu-51
 53-PheValAspPheLysGlnTrpAlaPheValGlyLeuPheArgLeuAlaArgLeuPheHisIleGlyAspAspP
 heValAspArgPheLeuGlyPhePhe-85
 121-GlyGluGluPheProGluAlaValValGluAlaAlaGlyAspValAlaArgHisPheAspValLeuAspLeu
 Val-145
 161-SerHisGlnAsnArgIle-166
 198-HisGlnThrLeuGlySerAspAlaGly-206
 210-ValGlnPheHisHisPheGly-216
 233-GlyLysProSerGlyGlyAsnGlyLeuGlyGlyLeuValAsnHisLeuArgLeuValAla-252
 268-IleGluValLeuArgArgAlaAspGlyGly-277
 279-AspGlyAlaAspValValAlaGlnMet-287

Antigenic Index - Jameson-Wolf

1-LeuArgArgValGlyGlyGln-7
 19-GlyValAspPheArgArgGlnLysPhePheGlyPheThrProArgGlnAlaVal-36
 38-LysHisPheArgLysPheHisArgPheArgArgGlyGlyGly-52
 74-GlyAspAspPheValAspArg-80
 88-PheProLysArgAsnGlyValAla-95
 103-SerValGlnThrAspGlnGluPhe-110
 118-PheGlyGlnGlyGluGluPheProGlu-126
 131-AlaAlaGlyAspValAlaArg-137
 145-ValAlaProAspGly-149
 157-GlnAsnIleGlySerHisGlnAsnArgIleThrGluGlnThrHisPhe-172
 201-LeuGlySerAspAlaGlyGlnAsnProVal-210
 230-GluSerAlaGlyLysProSerGlyGlyAsnGly-240
 252-AlaPheAspAspThrValValIleGlyGluGluGluGlyPheGly-267
 270-ValLeuArgArgAlaAspGlyGlyAlaAspGlyAlaAsp-282
 285-AlaGlnMetArgAspAlaGlyGlyGlyTyrAlaGly-296
 311-MetProSerGluArgGluLysAspValProIle-321
 323-ProAspLeuProProThrSerSerArgGlnGlnThr-334

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Hydrophilic Regions - Hopp-Woods

1-LeuArgArgValGly-5
 20-ValAspPheArgArgGlnLys-26
 38-LysHisPheArgLysPheHisArgPheArgArgGlyGluGly-52
 89-ProLysArgAsnGly-93
 105-GlnThrAspGlnGluPhe-110
 120-GlnGlyGluGluPhePro-125
 131-AlaAlaGlyAspValAlaArg-137
 162-HisGlnAsnArgIleThrGlu-168
 201-LeuGlySerAspAlaGlyGln-207
 231-SerAlaGlyLysProSerGly-237
 257-ValValIleGlyGluGluGluGlyPheGly-267
 270-ValLeuArgArgAlaAspGlyGlyAlaAspGlyAlaAsp-282
 285-AlaGlnMetArgAspAlaGly-291
 311-MetProSerGluArgGluLysAspValProIle-321
 326-ProProThrSerSerArgGlnGln-333

901-2**AMPHI Regions - AMPHI**

20-GlyLeuPheThrValLeuGly-26
 55-ValSerLeuThrGluIlePheSerLysSer-64
 66-GluAlaPheAlaGluIleTyrAsp-73
 84-AlaPheLeuAlaGlyMetGlyGlyIleAlaLeuIle-95
 97-ArgLeuValProAsnProHisGluThrLeuAsp-107
 124-ValGlyMetMetAlaAlaPhe-130
 136-AsnPheProGluGlyLeuAlaThrPhePheAlaThrLeuGlu-149
 164-HisAsnIleProGluGlyIleSer-171
 190-CysLeuLeuSerGlyLeuAlaGluProLeuGlyAlaAla-202
 217-PheGlySerValPheGlyValIleAlaGlyValMet-228
 143-TyrSerAspGlyHisGlu-248

Antigenic Index - Jameson-Wolf

1-MetProAspPheSerMet-6
 33-SerLysThrProAsnProArgVal-40
 61-PheSerLysSerSerGluAlaPhe-68
 71-IleTyrAspLysAspHisAla-77
 98-LeuValProAsnProHisGluThrLeuAspAlaGlnAspProSerPheGlnGluSerLysArgArgHisIleAla-122
 136-AsnPheProGluGly-140
 179-AlaThrArgSerArgLysLysThr-186
 193-SerGlyLeuAlaGluProLeuGly-200
 235-GluLeuLeuProAlaAlaLysArgTyrSerAspGlyHisGluThr-249

Hydrophilic Regions - Hopp-Woods

61-PheSerLysSerSerGluAlaPhe-68
 71-IleTyrAspLysAspHisAla-77
 102-ProHisGluThrLeuAspAlaGlnAspProSerPheGlnGluSerLysArgArgHisIleAla-122
 180-ThrArgSerArgLysLysThr-186
 235-GluLeuLeuProAlaAlaLysArgTyrSerAspGlyHisGlu-248

902**AMPHI Regions - AMPHI**

1-LeuHisPheGlnArgIleIleLysCysSerGluGlyIleTrpAlaValGlyAlaArgProThrValGlyPhePheGlyLysSerPheLysIleThrCysLysHisValValLeuArgArgArgThrValGlnAlaValAspPheThrThrCysLeuPheAlaValGlyHisPheValAspValProAlaTyrValPheAlaCysAspAlaHisThrGlyGlyValAlaValLysArgValTyrGlyAlaAspValValGlnAsnSerGlyGlyAlaPheCysGlnThrGlnGlyArgArgGly

nAsnThrValPheGlyIleMetPheGlnIleAlaGluGluProArgProAlaLeuArgAlaAlaProTyrHisAsnAlaValGlyGlyGlyLeuPheGluAspGlyLeuGlyPheLeuArgArgSerAsnValAlaValAspProAspArgAspValGlnThrAlaPheGlyPheGlyAspGluPheValThrArgPheAlaPheValHisLeuArgThrArgAlaSerValAspGlyLysGlyGlyAspAlaAlaIlePheGlyAspPheGlyAspAspGlyGlnValLeuMetValValValProThrGlnThrGlyPheGluGlyAsnGlyTyrAlaCysArgThrAspAspGlyPheGlnAsnGlyGlyAsnGlnArgLeuValLeuHisGlnArgAlaThrGlyLeuAspIleAlaAspPhePheSerGlyThrAlaHisValAspValAspLeuArgProLysAlaAspValValThrArgGlyIleArgHisLeuLeuArgIleAlaSerGlyAsnLeuHisGlyAsnAsnAlaAlaPheIleGlyLysIleAlaAlaValGlnGlyPheSerSerIleSerGluArgArgValAlaGlyGlnHisPheAlaHisArgProThrCysAlaLysIleSerAlaLysSerAlaGluArgPheValGlyAsnAlaArgHisArgArgLysCysAspGlyValValAspLysIleAlaAlaAspValHisAsnGlySerAlaPheGlnLysSerThrProLeuTyrIlePhe-360

Antigenic Index - Jameson-Wolf

1-LeuHisPheGlnArgIleIleLysCysSerGluGlyIleTrpAlaValGlyAlaArgProThrValGlyPhePheGlyLysSerPheLysIleThrCysLysHisValValLeuArgArgThrValGlnAlaValAspPheThrThrCysLeuPheAlaValGlyHisPheValAspValProAlaTyrValPheAlaCysAspAlaHisThrGlyGlyValAlaValLysArgValTyrGlyAlaAspValValGlnAsnSerGlyGlyAlaPheCysGlnThrGlnGlyArgArgGlnAsnThrValPheGlyIleMetPheGlnIleAlaGluProArgProAlaLeuArgAlaAlaProTyrHisAsnAlaValGlyGlyGlyLeuPheGluAspGlyLeuGlyPheLeuArgArgSerAsnValAlaValAspProAspArgAspValGlnThrAlaPheGlyPheGlyAspGluPheValThrArgPheAlaPheValHisLeuArgThrArgAlaSerValAspGlyLysGlyGlyAspAlaAlaIlePheGlyAspPheGlyAspAspGlyGlnValLeuMetValValValProThrGlnThrGlyPheGluGlyAsnGlyTyrAlaCysArgThrAspAspGlyPheGlnAsnGlyGlyAsnGlnArgLeuValLeuHisGlnArgAlaThrGlyLeuAspIleAlaAspPhePheSerGlyThrAlaHisValAspValAspLeuArgProLysAlaAspValValThrArgGlyIleArgHisLeuLeuArgIleAlaSerGlyAsnLeuHisGlyAsnAsnAlaAlaPheIleGlyLysIleAlaAlaValGlnGlyPheSerSerIleSerGluArgArgValAlaGlyGlnHisPheAlaHisArgProThrCysAlaLysIleSerAlaLysSerAlaGluArgPheValGlyAsnAlaArgHisArgArgLysCysAspGlyValValAspLysIleAlaAlaAspValHisAsnGlySerAlaPheGlnLysSerThrProLeuTyrIlePhe-360

Hydrophilic Regions - Hopp-Woods

1-LeuHisPheGlnArgIleIleLysCysSerGluGlyIleTrpAlaValGlyAlaArgProThrValGlyPhePheGlyLysSerPheLysIleThrCysLysHisValValLeuArgArgThrValGlnAlaValAspPheThrThrCysLeuPheAlaValGlyHisPheValAspValProAlaTyrValPheAlaCysAspAlaHisThrGlyGlyValAlaValLysArgValTyrGlyAlaAspValValGlnAsnSerGlyGlyAlaPheCysGlnThrGlnGlyArgArgGlnAsnThrValPheGlyIleMetPheGlnIleAlaGluGluProArgProAlaLeuArgAlaAlaProTyrHisAsnAlaValGlyGlyGlyLeuPheGluAspGlyLeuGlyPheLeuArgArgSerAsnValAlaValAspProAspArgAspValGlnThrAlaPheGlyAspGluPheValThrArgPheAlaPheValHisLeuArgThrArgAlaSerValAspGlyLysGlyGlyAspAlaAlaIlePheGlyAspPheGlyAspAspGlyGlnValLeuMetValValValProThrGlnThrGlyPheGluGlyAsnGlyTyrAlaCysArgThrAspAspGlyPheGlnAsnGlyGlyAsnGlnArgLeuValLeuHisGlnArgAlaThrGlyLeuAspIleAlaAspPhePheSerGlyThrAlaHisValAspValAspLeuArgProLysAlaAspValValThrArgGlyIleArgHisLeuLeuArgIleAlaSerGlyAsnLeuHisGlyAsnAsnAlaAlaPheIleGlyLysIleAlaAlaValGlnGlyPheSerSerIleSerGluArgArgValAlaGlyGlnHisPheAlaHisArgProThrCysAlaLysIleSerAlaLysSerAlaGluArgPheValGlyAsnAlaArgHisArgArgLysCysAspGlyValValAspLysIleAlaAlaAspValHisAsnGlySerAlaPheGlnLysSerThrProLeuTyrIlePhe-360

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AMPHI Regions - AMPHI

29-GluLeuIleArgSerMetGlnArgGln-37
109-AsnLeuSerArgLeuGlnLysAla-116
191-GluGlnGlyLeuGluAsnLeuArgArgLeuProSerVal-203
240-GlyGlyLysThrThrGlyLysTyr-247
262-SerAspLeuPheTyr-266
315-ArgTyrHisGluAlaThrGlu-321
360-ThrArgGlnThrTyrLysTyrIleAspAsp-369

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560-HisLysProLysGlyPheGlnThrThrAsnThr-570

Antigenic Index - Jameson-Wolf

21-LeuAlaAlaAspGluAsnAspAlaGluLeuIleArgSerMetGlnArgGlnGlnHisIleAsp-41
 48-AlaAsnValArgPheGluGlnProLeuGluLysAsnAsnTyrValLeuSerGluAspGluThrProCysThrA
 rg-72
 77-SerLeuAspAspLysThrValArg-84
 106-GlySerAsnAsnLeuSerArgLeuGlnLysAlaAla-117
 135-ProGlnAsnMetAspSerGlyIleLeu-143
 146-ArgValSerAlaGlyGluIleGlyAspIleArgTyrGluGluLysArgAspGlyLysSerAlaGluGlySer
 Ile-170
 178-ProLeuTyrArgAsnLysIleLeuAsn-186

 188-ArgAspValGluGlnGlyLeuGluAsnLeuArgArgLeuProSerValLysThrAspIle-207
 210-IleProSerGluGluGlyLysSerAspLeu-220
 223-LysTrpGlnGlnAsnLysProIleArg-231
 234-IleGlyIleAspAspAlaGlyGlyLysThrThrGlyLysTyrGlnGly-249
 256-AspAsnProLeuGly-260
 269-TyrGlyArgGlyLeuAlaHisLysThrAspLeuThrAspAlaThrGlyThrGluThrGluSerGlySerArg
 SerTyr-294
 309-PheAsnHisAsnGlyHisArgTyrHisGluAlaThrGluGlyTyrSerValAsnTyrAspTyrAsnGlyLys
 GlnTyrGln-335
 343-MetLeuTrpArgAsnArgLeuHisLysThrSerVal-354
 362-GlnThrTyrLysTyrIleAspAspAlaGluIleGluValGlnArgArgSerAlaGlyTrpGluAlaGlu
 LeuArgHis-388
 395-TrpGlnLeuAspGlyLysLeuSerTyrLysArgGlyThrGlyMetArgGlnSerMetProAlaProGluGlu
 AsnGlyGlyAspIleLeuProGlyThrSerArgMetLysIle-432
 459-GlnTrpAsnLysThrPro-464
 467-AlaGlnAspLysLeuSerIleGlySerArgTyrThrValArgGlyPheAspGlyGluGlnSerLeuPheGly
 GluArgGlyPheTyrTrpGlnAsnThr-499
 514-AlaAspTyrGlyArgValSerGlyGluSerAla-524
 527-ValSerGlyLysGln-531
 539-PheArgGlyGlyHisLysValGly-546
 557-LysProLeuHisLysProLysGlyPheGln-566

Hydrophilic Regions - Hopp-Woods

21-LeuAlaAlaAspGluAsnAspAlaGluLeuIleArgSerMetGlnArgGlnGlnHisIleAsp-41
 48-AlaAsnValArgPheGluGlnProLeuGluLysAsnAsn-60
 63-LeuSerGluAspGluThrProCys-70
 77-SerLeuAspAspLysThrValArg-84
 109-AsnLeuSerArgLeuGlnLysAlaAla-117
 151-GluIleGlyAspIleArgTyrGluGluLysArgAspGlyLysSerAlaGluGlySer-169
 188-ArgAspValGluGlnGlyLeuGluAsnLeuArgArgLeuProSerValLysThrAspIle-207
 211-ProSerGluGluGlyLysSerAspLeu-220
 234-IleGlyIleAspAspAlaGlyGlyLysThrThrGlyLysTyr-247
 273-LeuAlaHisLysThrAspLeuThrAsp-281

 283-ThrGlyThrGluThrGluSerGlySerArgSer-293
 315-ArgTyrHisGluAlaThrGlu-321
 366-TyrIleAspAspAlaGluIleGluValGlnArgArgSerAlaGlyTrp-382

 384-AlaGluLeuArgHis-388

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399-GlyLysLeuSerTyrLysArgGlyThrGlyMetArgGlnSerMetProAlaProGluGluAsnGlyGly-421
 428-SerArgMetLysIle-432
 467-AlaGlnAspLysLeuSerIle-473
 481-GlyPheAspGlyGluGln-486
 515-AspTyrGlyArgValSerGlyGluSer-523
 558-ProLeuHisLysProLysGly-564

904-2**AMPHI Regions - AMPHI**

23-AspPhePheAsnProPheGlnIleCysPheGlyValPheGlyGlnCysAla-39
 55-PheValAsnArgLeuAlaGlyPheHisArgIleGly-66
 69-PheAsnAlaValHisTyrIleGluPhe-97
 131-GluPheValSerAlaPheCysGlnThrTyr-140
 164-AlaGlnAsnIleIleGlnHisLeuArgThrTyrAlaArgAlaCysArgSerCysAlaArgGln-184
 193-IleSerAlaValValAspVal-199
 202-ArgThrLeuArgAlaPhe-207
 250-GlyIleValGlnMetLeu-255
 267-GlnPhePheThrGlnPhePheArgMetGlnGlnIleGlyGlyAlaAsn-282
 308-ArgCysPheAlaGlyLeuValGlu-315
 332-ThrAlaPheAspValPheHisAlaCys-340
 364-ValGlnThrPheMetGlnAspAla-371
 390-ArgIleValAlaAlaLeu-395
 402-GlyPhePheArgGlnProValAsn-409
 418-ProLeuCysAlaAspTyrTyrAsnIlePheSerHis-429

Antigenic Index - Jameson-Wolf

11-GlyAlaGlyGlyAspAspGlyAspArgArgAlaAlaAsp-23
 66-GlyThrAlaArgGlnAspVal-72
 84-AlaAspIleAspGly-88
 98-SerAsnThrHisThrGlyAsn-104
 106-ValAspLeuAspGly-110
 114-GlyGlyGlyIleLys-118
 126-SerGlyTyrArgThrGluPhe-132
 147-PheGlyArgGluArgAlaArgThrAspAlaArgGlyIleGlyPheAspAspAlaGln-165
 173-ThrTyrAlaArgAlaCysArgSerCysAlaArgGlnThrValGlyArgGlyAsnGluGlyIle-193
 199-ValGlnGlnArgThrLeuArgAlaPheLys-208
 224-HisValGlyAsnHisArgArgAsnAlaArgArgAspPhePheAspAsnArgHisHis-242
 261-IleGlyLysAspGlyIle-266
 279-GlyGlyAlaAsnGly-283
 293-ArgAlaAspAlaAlaAlaGlyArgAla-301
 314-ValGluArgAspValValArgGlnAspGlnArgAlaGlyArgArgAspPheGlnThr-332
 351-GlyPheGlyGlyAspAspAsnAlaArgThrAspGluAlaVal-364
 370-AspAlaAlaArgAsnGlnAlaGlnAsnGly-379
 384-AspAsnGlnGlyMet-388
 407-ProValAsnAspPhe-411

Hydrophilic Regions - Hopp-Woods

12-AlaGlyGlyAspAspGlyAspArgArgAlaAlaAsp-23
 66-GlyThrAlaArgGlnAspVal-72
 84-AlaAspIleAspGly-88
 147-PheGlyArgGluArgAlaArgThrAspAlaArgGlyIleGlyPheAspAspAlaGln-165
 173-ThrTyrAlaArgAlaCysArgSerCysAlaArg-183
 185-ThrValGlyArgGlyAsnGluGly-192
 199-ValGlnGlnArgThrLeuArgAlaPheLys-208

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226-GlyAsnHisArgArgAsnAlaArgArgAspPhePheAspAsnArgHisHis-242
 261-IleGlyLysAspGly-265
 293-ArgAlaAspAlaAlaAlaGlyArgAla-301
 314-ValGluArgAspValValArgGlnAspGlnArgAlaGlyArgArgAspPheGlnThr-332
 352-PheGlyGlyAspAspAsnAlaArgThrAspGluAlaVal-364
 370-AspAlaAlaArgAsnGlnAla-376
 907-2

AMPHI Regions - AMPHI

42-AspAspValAlaSerValMetArgSer-50
 66-LysGluGlyGluArgTrpLeuSerAlaMetSer-76
 78-ArgLeuAlaArgPheVal-83
 129-GlyAlaArgGlyLeu-133
 142-AsnTyrIleGlyLysProAlaHis-149
 165-LeuArgHisTyrArgAsnLeuGluLysGlyAsn-175
 177-ValArgAlaLeuAlaArgPheAsnGly-185

Antigenic Index - Jameson-Wolf

1-MetArgLysProThrAspThrLeuPro-9
 12-LeuGlnArgArgArgLeuLeu-18
 33-GlyAlaGlnArgGluGluThrLeuAlaAspAspValAlaSer-46
 51-SerValGlySerValAsnProProArgLeuValPheAspAsnProLysGluGlyGluArgTrp-71
 83-ValProGluGluGluGluArgArgArgLeu-92
 97-GlnTyrGluSerSerArgAlaGlyLeu-105
 115-GluValGluSerAlaPhe-120
 142-AsnTyrIleGlyLysProAlaHisAsn-150
 155-ArgThrAsnLeuArgTyrGly-161
 168-TyrArgAsnLeuGluLysGlyAsnIle-176
 184-AsnGlySerLeuGlySerAsnLysTyrProAsnAla-195
 200-TrpArgAsnArgTrpGlnTrp-206

Hydrophilic Regions - Hopp-Woods

1-MetArgLysProThrAsp-6
 12-LeuGlnArgArgArgLeuLeu-18
 33-GlyAlaGlnArgGluGluThrLeuAlaAspAspValAlaSer-46
 60-LeuValPheAspAsnProLysGluGlyGluArgTrp-71
 83-ValProGluGluGluGluArgArgArgLeu-92
 99-GluSerSerArgAlaGlyLeu-105
 115-GluValGluSerAlaPhe-120
 169-ArgAsnLeuGluLysGlyAsnIle-176
 908-2

AMPHI Regions - AMPHI

9-TyrLysGlnAsnLys-13
 26-ThrAlaAlaGluLeu-30
 127-ThrAspCysTyrArgSerTyrAspValLeuAspValArgGluPheSerHisPheSer-145

Antigenic Index - Jameson-Wolf

1-MetArgLysSerArgLeuSerArgTyrLysGlnAsnLysLeu-14
 51-GlnAsnSerProHis-55
 59-PheAspGlyGluValGluAlaAspGluSerTyrPheGlyGlyGlnArgLysGlyLysArgGlyArgGlyAlaAlaGly-84
 91-LeuLeuLysArgAsnGlyLysVal-98
 115-IleArgGluGlnValLysProAspSerIleVal-125
 127-ThrAspCysTyrArgSerTyrAsp-134
 136-LeuAspValArgGlu-140
 161-ArgThrThrLysProTyr-166

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Hydrophilic Regions - Hopp-Woods

1-MetArgLysSerArgLeuSerArgTyrLysGlnAsnLysLeu-14
 59-PheAspGlyGluValGluAlaAspGluSerTyr-69
 72-GlyGlnArgLysGlyLysArgGlyArgGlyAlaAlaGly-84
 92-LeuLysArgAsnGlyLys-97
 115-IleArgGluGlnValLysProAspSer-123
 136-LeuAspValArgGlu-140
 909

AMPHI Regions - AMPHI

71-GlyAsnAsnAlaAspGlu-76

Antigenic Index - Jameson-Wolf

22-ThrTyrGlnAspGlyAsnGlyLysThrAlaValArgGlnLysTyrProAlaGly-39
 45-GlnAspGlySerTyrSerLysAsnMetAsnTyrAsnGlnTyrArgProGluArgHisAla-64
 68-AsnGlnThrGlyAsnAsnAlaAspGluGluHisArgGlnHisTrpGlnLysProLysPheGlnAsnArg-90

Hydrophilic Regions - Hopp-Woods

23-TyrGlnAspGlyAsnGlyLysThrAlaValArgGlnLysTyr-36
 58-TyrArgProGluArgHisAla-64
 72-AsnAsnAlaAspGluGluHisArgGlnHisTrpGln-83
 85-ProLysPheGlnAsnArg-90
 910

AMPHI Regions - AMPHI

10-ValSerLeuSerAlaAla-15
 22-SerAlaGluArgGlnIle-27
 39-LysAlaValLysMetLeuGlu-45
 58-AspHisTrpGlyLysPro-63
 69-AlaTyrLysAspGlyArg-74

Antigenic Index - Jameson-Wolf

19-AlaGlyAspSerAlaGluArgGlnIleTyrGlyAspProHisPheGluGlnAsnArgThrLysAlaValLysMetLeuGluGlnArgGlyTyrGln-50
 53-AspValAspAlaAspAspHisTrpGlyLysProValLeuGlu-66
 68-GluAlaTyrLysAspGlyArgGluTyrAsp-77
 83-ProAspLeuLysIleIleLysGluGlnLeuAspArg-94

Hydrophilic Regions - Hopp-Woods

21-AspSerAlaGluArgGlnIleTyr-28
 31-ProHisPheGluGlnAsnArgThrLysAlaValLysMetLeuGluGlnArgGly-48
 53-AspValAspAlaAspAspHisTrpGly-61
 68-GluAlaTyrLysAspGlyArgGluTyrAsp-77
 86-LysIleIleLysGluGlnLeuAspArg-94
 911

AMPHI Regions - AMPHI

6-LeuGluPheTrpValGlyLeuPhe-13
 43-ValTyrAlaAspPheGlyAspIleGly-51
 97-ValSerAlaGlnIle-101
 118-GlyAspThrGluAsnLeuAla-124
 140-AsnLeuIleGlyLysPheMetThrSerPhe-149

Antigenic Index - Jameson-Wolf

1-MetLysLysAsnIle-5
 35-GlyGlySerAspLysThrTyr-41
 48-GlyAspIleGlyGlyLeuLysValAsnAlaProValLys-60

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74-LeuAspProLysSerTyrGlnAlaArgValArgLeuAspLeuAspGlyLysTyrGlnPheSerSerAspVal-
 97
 103-ThrSerGlyLeuLeuGly-108
 115-GlnGlnGlyGlyAspThrGluAsn-122
 149-PheAlaGluLysAsnAlaAspGlyGlyAsnAlaGluLysAlaAlaGlu-164

Hydrophilic Regions - Hopp-Woods

1-MetLysLysAsnIle-5
 36-GlySerAspLysThr-40
 74-LeuAspProLysSerTyrGlnAlaArgValArgLeuAspLeuAspGly-89
 116-GlnGlyGlyAspThrGluAsn-122
 149-PheAlaGluLysAsnAlaAspGlyGlyAsnAlaGluLysAlaAlaGlu-164
 912

AMPHI Regions - AMPHI

24-ProAlaAspAlaValSerGlnIle-31
 62-PheAspPheGlnArgMetThrAlaLeuAlaValGlyAsnProTrpArgThrAlaSerAspAlaGlnLys-84
 89-LysGluPheGlnThrLeu-94
 169-TyrArgAsnGlnPheGlyGluIleIleLysAlaLys-180

Antigenic Index - Jameson-Wolf

1-MetLysLysSerSer-5
 29-SerGlnIleArgGlnAsnAlaThrGln-37
 42-LeuLysAsnGlyAspAlaAsnThrAlaArgGlnLysAlaGluAla-56
 74-AsnProTrpArgThrAlaSerAspAlaGlnLysGlnAlaLeuAlaLysGluPhe-91
 104-LeuLysLeuLysAsnAlaAsnValAsnValLysAspAsnProIleValAsnLysGlyGlyLysGluIleIle
 Val-128
 130-AlaGluValGlyValProGlyGlnLysProValAsn-141
 146-ThrTyrGlnSerGlyGlyLysTyrArgThr-155
 169-TyrArgAsnGlnPhe-173
 177-IleLysAlaLysGlyValAspGlyLeuIleAla-187
 189-LeuLysAlaLysAsnGlyGlyLys-196

Hydrophilic Regions - Hopp-Woods

1-MetLysLysSerSer-5
 31-IleArgGlnAsnAla-35
 43-LysAsnGlyAspAlaAsnThrAlaArgGlnLysAlaGluAla-56
 78-ThrAlaSerAspAlaGlnLysGlnAlaLeuAlaLysGluPhe-91
 104-LeuLysLeuLysAsn-108
 110-AsnValAsnValLysAspAsnProIleVal-119
 121-LysGlyGlyLysGluIleIleVal-128
 134-ValProGlyGlnLysProValAsn-141
 177-IleLysAlaLysGlyValAsp-183
 189-LeuLysAlaLysAsnGlyGlyLys-196
 913

AMPHI Regions - AMPHI

22-GluThrArgProAlaAspProTyrGluGlyTyrAsnArg-34
 53-ArgGlyTyrArgLysValAlaProLys-61
 66-GlyValSerAsnPhePheAsnAsnLeuCysAspValValSer-79
 107-LeuGlyGlyLeuIleAspIleAlaGlyAla-116
 151-ValArgAspAlaLeuGlyThrGlyIleThrSerValTyrSer-164
 193-AspLeuThrAspSerLeuAspGluAlaAla-202
 238-LeuValGluSerAla-242
 257-SerGluThrGlnAla-261

Antigenic Index - Jameson-Wolf

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21-AlaGluThrArgProAlaAspProTyrGluGlyTyrAsn-33
 39-PheAsnAspGlnAlaAspArgTyr-46
 51-AlaAlaArgGlyTyrArgLysValAlaProLysProValArgAla-65
 81-GlySerAsnIleLeu-85
 87-LeuAspIleLysArgAlaSerGluAspLeuVal-97
 117-GlyGlyIleProAspAsnLysAsnThrLeuGlyAsp-128
 132-SerTrpGlyTrpLysAsnSerAsn-139
 149-SerThrValArgAspAlaLeu-155
 163-TyrSerProLysAsnIle-168
 172-ThrProValGlyArgTrpGly-178
 185-ValSerThrArgGluGlyLeuLeuAspLeuThrAspSerLeuAspGluAlaAlaIleAspLysTyrSerTyr
 ThrArgAspLeuTyrMet-214
 216-ValArgAlaArgGlnThrGlyAlaThrProAlaGluGlyThrGluAspAsnIleAspIleAspGluLeuVal
 GluSerAlaGluThrGlyAlaAla-247
 250-AlaValGlnGluAspSerValSerGluThrGlnAlaGluAlaAlaGlyGluAlaGluThrGlnProGlyThr
 GlnPro-275

Hydrophilic Regions - Hopp-Woods

21-AlaGluThrArgProAlaAspProTyrGluGlyTyrAsn-33
 40-AsnAspGlnAlaAsp-44
 53-ArgGlyTyrArgLysValAlaProLysProValArg-64
 87-LeuAspIleLysArgAlaSerGluAspLeuVal-97
 118-GlyIleProAspAsnLysAsnThrLeu-126
 150-ThrValArgAspAlaLeu-155
 186-SerThrArgGluGlyLeuLeuAspLeuThrAspSerLeuAspGluAlaAlaIleAsp-204
 216-ValArgAlaArgGlnThrGly-222
 224-ThrProAlaGluGlyThrGluAspAsnIleAspIleAspGluLeuValGluSerAlaGluThrGlyAlaAla
 -247
 250-AlaValGlnGluAspSerValSerGluThrGlnAlaGluAlaAlaGlyGluAlaGluThrGlnPro-271
914-2

AMPHI Regions - AMPHI

6-LeuGlyIleLeuThrAlaCysAlaAlaMet-15
 17-AlaPheAlaAspArgIleGlyAspLeu-25
 65-PheGlnLysThrPheGlu-70
 81-GlnLysValArgGlnAlaCys-87

Antigenic Index - Jameson-Wolf

18-PheAlaAspArgIleGlyAspLeuGluAlaArgLeuAlaGlnLeuGluHisArgValAlaValLeuGluSerG
 lyGlyAsnThrValLys-47
 50-LeuPheGlySerAsnSer-55
 64-ProPheGlnLysThrPheGluAlaSerAspArgAsnGluGlyValAlaArgGlnLysValArgGlnAlaCysA
 snArgGluThrSerAla-93
 95-PheCysGluAspGluAlaIleArgCysArgLysPheAsp-107

Hydrophilic Regions - Hopp-Woods

18-PheAlaAspArgIleGlyAspLeuGluAlaArgLeuAlaGlnLeuGluHisArgValAlaVal-38
 67-LysThrPheGluAlaSerAspArgAsnGluGlyValAlaArgGlnLysValArgGlnAlaCysAsnArgGluT
 hrSer-92
 95-PheCysGluAspGluAlaIleArgCysArgLysPheAsp-107
915-2

AMPHI Regions - AMPHI

9-ValAlaValSerAlaLeuSerAlaCysArgGlnAla-20
 31-IleSerAspArgSerVal-36
 67-SerThrIleLysGlnMetPheGlyTyrThrLysLeuProGluGluProLysGlyIleArgValIleTyrValT
 hrAspMetGlyAsnValThrAspTrpThr-100

-334-

139-GlnAlaGluLysPhe-143

Antigenic Index - Jameson-Wolf

15-SerAlaCysArgGlnAlaGluGluGlyProProProLeuProArgGlnIleSerAspArgSerValGlyHis-38
 43-AsnLeuThrGluHisAsnGlyProLysAla-52
 57-AsnGlyLysProAspGlnProVal-64
 75-TyrThrLysLeuProGluGluProLysGlyIle-85
 97-ThrAspTrpThrAsnProAsnAlaAspThrGluTrpMetAspAlaLysLys-113
 125-GlyMetGlyAlaGluAspAlaLeuProPheGlyAsnLysGluGlnAlaGluLysPheAlaLysAspLysGlyGlyLysValValGlyPheAspAspMetProAspThrTyr-161

Hydrophilic Regions - Hopp-Woods

18-ArgGlnAlaGluGluGlyProProProLeu-27
 30-GlnIleSerAspArgSerVal-36
 46-GluHisAsnGlyProLys-51
 58-GlyLysProAspGln-62
 77-LysLeuProGluGluProLysGlyIle-85
 103-AsnAlaAspThrGluTrpMetAspAlaLysLys-113
 127-GlyAlaGluAspAlaLeu-132
 135-GlyAsnLysGluGlnAlaGluLysPheAlaLysAspLysGlyGlyLys-150
 155-AspAspMetProAsp-159

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AMPHI Regions - AMPHI

6-ProLeuAlaValLeuThrAlaLeuLeuLeu-15
 35-GlnAsnValLeuLysIleTyrAsnTrpSerGluTyrValAspProGluThrValAlaAsp-54
 99-IleLysAlaGlyAlaTyrGlnLysIleAspLysSerLeu-111
 124-ArgLeuMetAspGlyValAspPro-131
 152-ArgValLysLysAlaLeu-157
 188-AspSerAlaAlaGlu-192
 206-AsnSerSerAsnThrGluAspIleArgGluAlaThr-217
 292-AlaLysAsnValAlaAsnAlaHisLysTyrIleAsnAspPheLeuAsp-307
 325-LysProAlaArgGluLeuMetGluAsp-333

Antigenic Index - Jameson-Wolf

18-CysGlyGlySerAspLysProProAlaGluLysProAlaProAlaGluAsnGlnAsnVal-37
 44-SerGluTyrValAspProGluThrValAlaAspPheGluLysLysAsnGlyIleLysValThr-64
 68-TyrAspSerAspGluThrLeuGluSerLysValLeuThrGlyLysSerGlyTyrAsp-86
 102-GlyAlaTyrGlnLysIleAspLysSerLeuIleProAsnTyrLysHisLeuAsnProGluMetMetArgLeuMetAspGlyValAspProGlyHisGluTyr-135
 149-AsnThrGluArgValLysLysAlaLeuGlyThrAspLysLeuProAspAsnGln-166
 171-PheAspProGluTyrThrSerLysLeuLysGlnCysGly-183
 201-LeuGlyLysAsnProAsnSerSerAsnThrGluAspIleArgGluAlaThrAlaLeuLeuLysLysAsnArgProAsnIleLysArgPheThrSerSerGlyPheIle-236
 238-AspLeuAlaArgGlyAspThr-244
 255-AsnIleAlaLysArgArgAlaGluGluAlaGlyGlyLysGluLysIleArgValMetMetProLysGluGlyValGly-280
 287-ValIleProLysAspAlaLysAsnValAlaAsn-297
 305-PheLeuAspProGluValSerAlaLysAsnGlyAsn-316
 320-TyrAlaProSerSerLysProAlaArgGluLeuMetGluAspGluPheLysAsnAspAsnThrIlePheProThrGluGluAspLeuLysAsn-350
 368-GlnTrpGlnAspValLysAlaGlyLys-376

Hydrophilic Regions - Hopp-Woods

19-GlyGlySerAspLysProProAlaGluLysProAlaProAlaGluAsn-34

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47-ValAspProGluThrValAlaAspPheGluLysLysAsnGlyIle-61
 68-TyrAspSerAspGluThrLeuGluSerLysValLeuThr-80
 105-GlnLysIleAspLysSerLeu-111
 121-GluMetMetArgLeuMetAspGlyValAspProGlyHis-133
 149-AsnThrGluArgValLysLysAlaLeuGlyThrAspLysLeuProAspAsnGln-166
 174-GluTyrThrSerLysLeuLysGln-181
 204-AsnProAsnSerSerAsnThrGluAspIleArgGluAlaThrAlaLeuLeuLysLysAsnArgProAsnIle
 LysArgPheThr-231
 238-AspLeuAlaArgGlyAspThr-244
 255-AsnIleAlaLysArgArgAlaGluGluAlaGlyGlyLysGluLysIleArgValMetMetProLysGluGly
 -278
 290-LysAspAlaLysAsnValAlaAsn-297
 305-PheLeuAspProGluValSerAlaLysAsn-314
 322-ProSerSerLysProAlaArgGluLeuMetGluAspGluPheLysAsnAspAsn-339
 343-ProThrGluGluAspLeuLysAsn-350
 370-GlnAspValLysAlaGlyLys-376
 919

AMPHI Regions - AMPHI

12-GlyIleAlaAlaAlaIleLeu-18
 24-LysSerIleGlnThrPheProGln-31
 37-IleAsnGlyProAspArgProValGlyIleProAsp-48
 76-AspPheAlaLysSerLeuGln-82
 98-GlnAspValCysAlaGlnAlaPheGlnThrProVal-109
 119-GluArgTyrPheThr-123
 133-LeuAlaGlyThrValThrGlyTyrTyrGlu-142
 161-GlyIleProAspAspPheIleSerValPro-170
 176-ArgSerGlyLysAlaLeuValArgIleArgGln-186
 191-SerGlyThrIleAspAsnThrGlyGlyThr-200
 307-MetGlnGlyIleLysSerTyrMetArgGlnAsnProGlnArgLeuAlaGluValLeu-325
 348-AlaLeuGlyThrProLeuMetGlyGlyTyrAlaGlyAlaVal-361
 382-ArgLysAlaLeuAsnArg-387

Antigenic Index - Jameson-Wolf

21-CysGlnSerLysSerIleGlnThr-28
 30-ProGlnProAspThr-34
 36-ValIleAsnGlyProAspArgProValGlyIleProAspProAlaGlyThr-52
 54-ValGlyGlyGlyGly-58
 76-AspPheAlaLysSerLeuGln-82
 87-GlyCysAlaAsnLeuLysAsnArgGlnGlyTrpGln-98
 121-TyrPheThrProTrp-125
 143-ProValLeuLysGlyAspAspArgArgThrAlaGln-154
 162-IleProAspAspPheIle-167
 173-AlaGlyLeuArgSerGlyLysAlaLeuValArgIleArgGlnThrGlyLysAsnSerGlyThrIleAspAsn
 ThrGlyGlyThrHis-201
 215-ThrAlaIleLysGlyArgPheGluGlySerArgPheLeuProTyrHisThrArgAsnGlnIleAsnGlyGly
 AlaLeuAspGlyLysAlaPro-245
 250-AlaGluAspProValGlu-255
 262-GlnGlySerGlyArgLeuLysThrProSerGlyLysTyrIleArg-276
 278-GlyTyrAlaAspLysAsnGluHisPro-286
 293-TyrMetAlaAspLysGlyTyrLeuLysLeuGlyGln-304
 308-GlnGlyIleLysSerTyrMetArgGlnAsnProGlnArgLeuAlaGlu-323
 326-GlyGlnAsnProSer-330
 337-LeuAlaGlySerSerAsnAspGlyProVal-346
 359-GlyAlaValAspArgHisTyr-365
 379-ProValThrArgLysAlaLeuAsn-386

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393-AspThrGlySerAlaIleLysGlyAlaValArg-403
 409-GlyTyrGlyAspGluAlaGlyGluLeuAlaGlyLysGlnLysThrThr-424
 431-LeuProAsnGlyMetLysProGluTyrArgPro-441

Hydrophilic Regions - Hopp-Woods

38-AsnGlyProAspArgProValGly-45
 90-AsnLeuLysAsnArgGlnGlyTrp-97
 144-ValLeuLysGlyAspAspArgArgThrAlaGln-154
 175-LeuArgSerGlyLysAlaLeuValArgIleArgGlnThrGlyLysAsnSerGlyThrIleAspAsnThrGly-198
 215-ThrAlaIleLysGlyArgPheGluGly-223
 239-AlaLeuAspGlyLysAla-244
 250-AlaGluAspProVal-254
 265-GlyArgLeuLysThrProSer-271
 279-TyrAlaAspLysAsnGluHis-285
 317-AsnProGlnArgLeuAlaGlu-323
 337-LeuAlaGlySerSerAsnAspGlyPro-345
 380-ValThrArgLysAlaLeuAsn-386
 393-AspThrGlySerAlaIle-398
 412-AspGluAlaGlyGluLeuAlaGlyLysGlnLysThr-423
 434-GlyMetLysProGluTyrArgPro-441
920-2

AMPHI Regions - AMPHI

43-GlyGluPheProGluLeuGluProIleAla-52
 117-GlyIleLysGluMetProAsp-123
 135-LysAsnIleValAsnVal-140
 163-LeuAspAsnProAlaAsn-168
 190-ThrValThrAlaThrPheAspGlyPheAspThrSerAspArgSerLys-205
 212-GlnAlaPheSerAspSerThr-218

Antigenic Index - Jameson-Wolf

40-LeuGlyTyrGlyGluPheProGlu-47
 49-GluProIleAlaLysAspArgLeu-56
 66-ValThrGluLysGlyLysGluAsnMetIle-75
 77-ArgGlyThrTyrAsnTyrGlnTyrArgSerAsnArgProValLysAspGlySerTyr-95
 104-ThrPheTrpSerLysAsnLysAlaGlyTrp-113
 116-AlaGlyIleLysGluMetProAspAlaSerTyrCysGluGlnThrArgMetPheGlyLysAsnIleValAsnValGlyHisGluSerAlaAspThr-147
 152-LysProValGlyGlnAsnLeuGlu-159
 162-ProLeuAspAsnProAla-167
 173-GluArgPheLysVal-177
 181-PheArgGlyGluProLeuProAsnAla-189
 194-ThrPheAspGlyPheAspThrSerAspArgSerLysThrHisLysThrGluAla-211
 213-AlaPheSerAspSerThrAspAspLysGlyGluValAsp-225
 237-AsnValGluHisLysThrAspPheProAspGlnSerValCysGlnLysGlnAlaAsnTyrSer-257

Hydrophilic Regions - Hopp-Woods

49-GluProIleAlaLysAspArgLeu-56
 66-ValThrGluLysGlyLysGluAsnMetIle-75
 85-ArgSerAsnArgProValLysAspGlySer-94
 107-SerLysAsnLysAlaGlyTrp-113
 116-AlaGlyIleLysGluMetProAsp-123
 128-GluGlnThrArgMetPheGly-134
 142-HisGluSerAlaAsp-146
 173-GluArgPheLysVal-177

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196-AspGlyPheAspThrSerAspArgSerLysThrHisLysThrGluAla-211
 213-AlaPheSerAspSerThrAspAspLysGlyGluValAsp-225
 237-AsnValGluHisLysThrAspPheProAsp-246
 248-SerValCysGlnLys-252

921

AMPHI Regions - AMPHI

12-AlaValLeuSerGlyCysGlnSerIleTyrValProThrLeuThrGluIleProValAsn-31
 33-IleAsnThrValLysThr-38
 51-HisTrpThrAspValAlaLysIleSerAspGlu-61
 72-GlyLysMetThrLysValGlnAlaAlaGlnTyrLeuAsnAsnPheArgLys-88
 98-AspSerMetTyrGluIleTyrLeuArg-106
 126-GlnAsnAlaLeuArgGlyTrpGlnGlnArg-135

Antigenic Index - Jameson-Wolf

36-ValLysThrGluAlaProAlaLysGlyPheArg-46
 56-AlaLysIleSerAspGluAlaThrArg-64
 72-GlyLysMetThrLys-76
 84-AsnAsnPheArgLysArgLeuValGlyArgAsnAlaValAspAspSerMet-100
 108-AlaIleAspSerGlnArgGlyAlaIleAsnThrGluGlnSerLys-122
 128-AlaLeuArgGlyTrpGlnGlnArgTrpLysAsnMetAspValLysProAsnAsnProAla-147

Hydrophilic Regions - Hopp-Woods

36-ValLysThrGluAlaProAlaLysGlyPheArg-46
 56-AlaLysIleSerAspGluAlaThrArg-64
 86-PheArgLysArgLeuValGly-92
 94-AsnAlaValAspAspSerMet-100
 108-AlaIleAspSerGlnArgGlyAlaIleAsnThrGluGlnSerLys-122
 136-TrpLysAsnMetAspValLysProAsnAsn-145

922

AMPHI Regions - AMPHI

16-LeuSerAlaCysThr-20
 28-ArgAlaAsnGluAlaGlnAlaPro-35

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37-AlaValGluMetLysLys-42
 72-ValArgArgPheValAspAsp-78
 89-GluTrpGlnAspPhePheAspLys-96
 104-ValLysIleMetHis-108
 144-AspAspValAlaGln-148
 172-GlySerPheArgValAlaAspAlaLeu-180
 196-LysGluLeuValGluLeuLeuLysLeuAla-205
 222-AlaMetGlyMetPro-226
 245-HisArgAspIleTrpGlyAsnValGlyAspValAlaAlaSerValAlaAsnTyrMetLysGlnHis-266
 298-ArgThrValAlaAspLeuLysAlaTyr-306
 335-TyrLeuGlyLeuAsnAsnPheTyrThr-343

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Antigenic Index - Jameson-Wolf

1-MetLysLysArgLysIleLeu-7
 22-MetGluAlaArgProProArgAlaAsnGluAlaGlnAlaProArgAlaValGluMetLysLysGluSerArgP
 roAlaPhe-48
 61-ValSerAspSerGlyPhe-66

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70-AlaAsnValArgArgPheValAspAspGluValGlyLysGlyAspPheSerArgAlaGluTrp-90
 "
 "
 107-MetHisArgProSerThrSerArgPro-115
 120-ArgThrGlyAsnSerGlyLysAlaLysPheArgGlyAlaArgArgPheTyrAlaGluAsnArgAlaLeuIle-143
 145-AspValAlaGlnLysTyrGlyVal-152
 163-IleGluThrAsnTyrGlyLysAsnThrGlySer-173
 "
 "
 186-AspTyrProArgArgAlaGlyPhePhe-194
 "
 "
 203-LysLeuAlaLysGluGluGlyGlyAsp-211
 229-MetProSerSerTyrArgLysTrpAlaValAspTyrAspGlyAspGlyHisArgAspIle-248
 266-HisGlyTrpArgThrGlyGlyLysMet-274
 "
 281-AlaProGlyAlaAsp-285
 290-IleGlyGluLysThrAlaLeu-296
 "
 "
 310-ProGlyGluGluLeuAlaAspAspGluLysAlaVal-321
 326-GluThrAlaProGly-330
 357-ValArgAspIleAlaAsnSerLeuGlyGlyProGlyLeu-369

Hydrophilic Regions - Hopp-Woods
 1-MetLysLysArgLysIleLeu-7
 22-MetGluAlaArgProProArgAlaAsnGluAlaGlnAlaProArgAlaValGluMetLysLysGluSerArgProAlaPhe-48
 70-AlaAsnValArgArgPheValAspAspGluValGlyLysGlyAspPheSerArgAlaGluTrp-90
 "
 "
 122-GlyAsnSerGlyLysAlaLysPheArgGlyAlaArgArgPheTyrAlaGluAsnArgAlaLeuIle-143
 166-AsnTyrGlyLysAsnThrGly-172
 187-TyrProArgArgAlaGlyPhePhe-194
 203-LysLeuAlaLysGluGluGlyGlyAsp-211
 240-TyrAspGlyAspGlyHisArgAspIle-248
 290-IleGlyGluLysThrAlaLeu-296
 "
 "
 310-ProGlyGluGluLeuAlaAspAspGluLysAlaVal-321
 357-ValArgAspIleAla-361
923-2
AMPHI Regions - AMPHI
 9-LeuMetAlaCysAlaAlaPheLeu-16
 26-LeuGlyAlaCysTyrAlaIleLeuSerLeuTyrAla-37
 63-ProAlaLeuLeuGlyGlyTrpValGlyAlaTyr-73
 117-GlyValAlaSerProCysArgThrIleCysThrValCysGlyPheValAlaLeu-134

Antigenic Index - Jameson-Wolf

43-IleAspLysArgCysAlaIleArgGlyGlnArgArgIleProGluHisArgLeu-60
 79-PheLysHisLysThrAlaLysLysArgPhe-88

Hydrophilic Regions - Hopp-Woods

43-IleAspLysArgCysAlaIleArgGlyGlnArgArgIleProGluHisArgLeu-60
 79-PheLysHisLysThrAlaLysLysArgPhe-88

925-1

AMPHI Regions - AMPHI

8-ValGlyValValAlaValLeu-14
 116-LysCysGlyGlnThrAlaGlnAlaTyrArgAspAla-127
 139-GlnHisLeuAlaAlaIleGluGlnLeuLys-148
 155-PheAspGluLeuGlu-159

Antigenic Index - Jameson-Wolf

15-AlaGlyCysGlyLysAspAlaGlyGlyTyrTrpArgGluLysSerAspLysLysGluGlyMetI
 leAlaValLysLysGluLysGlyAsn-47
 57-ThrGlyLysGluGluSerLeuLeuLeuSerGluLysAspGlyAla-71
 75-AsnThrGlyIleGly-79
 81-IleProIleLysLeuSerAspAspGlyLysGluLeuTyrValGluArgArgGlnTyrValLysThrAspAlaA
 laMetLysAspLysIleIleAlaHisGlnLysLysCysGlyGlnThr-120
 123-AlaTyrArgAspAlaArgAsnAlaLeuProSerAsnGlnThrTyr-137
 145-GluGlnLeuLysArgArgPheGluAlaGluPheAspGluLeuGluLysGluIleLysCysAsnGlyArgSer
 ProAla-170

Hydrophilic Regions - Hopp-Woods

17-CysGlyLysAspAlaGlyGly-23
 27-TyrTrpArgGluLysSerAspLysLysGluGlyMetIleAlaValLysLysGluLysGly-46
 57-ThrGlyLysGluGluSerLeuLeuLeuSerGluLysAspGlyAla-71
 81-IleProIleLysLeuSerAspAspGlyLysGluLeuTyrValGluArgArgGlnTyrValLysThrAspAlaA
 laMetLysAspLysIleIleAlaHisGlnLysLysCysGlyGln-119
 123-AlaTyrArgAspAlaArgAsnAlaLeu-131
 145-GluGlnLeuLysArgArgPheGluAlaGluPheAspGluLeuGluLysGluIleLysCysAsnGlyArgSer
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AMPHI Regions - AMPHI

29-ProSerGluHisIleSerSerPhe-36
 72-LeuGlySerThrLeuGlyGln-78
 98-AlaGluSerAlaGluGluLeuSerArgGln-107
 128-AlaGlyAlaProTyrArgIleLeuProAspGlyIle-139
 151-AlaAspSerGlyGlyGlnVal-157

Antigenic Index - Jameson-Wolf

19-LeuProGlnAsnAsnGluAsnLeuTrpGlnProSerGluHisIleSer-34
 37-AlaAlaGluGlyArgLeuAlaValLysAlaGluGlyLysGlySerTyrAla-53
 70-ThrProLeuGlySer-74
 79-LeuCysGlnAspArgAspGlyAlaLeu-87
 89-ValAspGlyLysGlyAsnValTyr-96
 99-GluSerAlaGluGluLeuSerArg-106
 121-TrpAlaAspGlyArgArgValAla-128
 134-IleLeuProAspGlyIleLeu-140
 148-GlyArgThrAlaAspSerGlyGlyGln-156
 177-GlyMetProSerGluThrGluThrProGluArgCysAlaAlaArgThrArg-193

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Hydrophilic Regions - Hopp-Woods

37-AlaAlaGluGlyArgLeuAlaValLysAlaGluGlyLysGlySer-51
 80-CysGlnAspArgAspGlyAlaLeu-87
 89-ValAspGlyLysGly-93
 99-GluSerAlaGluGluSerArg-106
 123-AspGlyArgArgValAla-128
 149-ArgThrAlaAspSerGlyGlyGln-156
 180-SerGluThrGluThrProGluArgCysAlaAlaArgThrArg-193
 927-2

AMPHI Regions - AMPHI

13-LeuLeuThrAlaCys-17
 48-SerTyrAspValAlaArgAspPheTyrLysGlu-58
 120-LysGlyTrpGlnGlnAlaLeuPro-127
 145-AsnProLysGlnIleArgAspTrpAsnAspLeuAlaLysAspGly-159
 197-LysLeuValAlaSerIleLeu-203
 223-ArgAsnIleGlyAspValLeu-229
 275-ThrGlnLysThrAlaArgAla-281
 283-LeuGluTyrLeuTrpSerGluProAlaGlnGluLeu-294
 325-LysLysPheGlyGlyTrpAspAsnIleMetLysThr-336

Antigenic Index - Jameson-Wolf

18-SerProAlaAlaAspSerAsnHisProSerGlyGlnAsnAlaProAlaAsnThrGluSerAspGlyLysAsnIleThr-43
 48-SerTyrAspValAlaArgAspPheTyrLysGluTyrAsnPro-61
 67-TyrGlnSerGluHisProGlyThrSer-75
 79-GlnGlnSerHisGlyGlySerSerLysGlnAla-89
 104-AsnGlnSerSerAspIleAspLeuLeuGluLysLysGlyLeuVal-118
 125-AlaLeuProAspHisAlaAlaProTyrThr-134
 142-ArgLysAsnAsnProLysGlnIleArgAspTrpAsnAspLeuAlaLysAspGlyVal-160
 166-AsnProLysThrSerGlyAsnGlyArg-174
 185-LeuLysThrThrAsnGlyAsnGluGlnGluAlaGlnLys-197
 203-LeuLysAsnThrProValPheGluAsnGlyGlyArgAlaAlaThr-217
 220-PheThrGlnArgAsnIleGlyAsp-227
 238-TyrValSerLysLysLeuThrGlnGlyGln-247
 270-ValAlaLysLysGlyThrGlnLysThrAlaArgAla-281
 300-LeuArgProArgAsnProGluValLeuAlaArgHisLysAlaAspPheProAspLeuAspThrPheSerProGluLysLysPheGlyGlyTrp-330
 337-TyrPheAlaAspGlyGlyIle-343
 347-LeuThrAlaGlnLys-351

Hydrophilic Regions - Hopp-Woods

19-ProAlaAlaAspSerAsnHisProSer-27
 33-AlaAsnThrGluSerAspGlyLysAsn-41
 50-AspValAlaArgAspPheTyrLys-57
 67-TyrGlnSerGluHisProGly-73
 82-HisGlyGlySerSerLysGlnAla-89
 105-GlnSerSerAspIleAspLeuLeuGluLysLysGlyLeuVal-118
 142-ArgLysAsnAsnProLysGlnIleArgAspTrpAsnAspLeuAlaLysAspGlyVal-160
 167-ProLysThrSerGlyAsnGly-173
 187-ThrThrAsnGlyAsnGluGlnGluAlaGlnLys-197
 211-AsnGlyGlyArgAlaAla-216
 238-TyrValSerLysLysLeuThr-244
 270-ValAlaLysLysGlyThrGlnLysThrAlaArgAla-281
 300-LeuArgProArgAsnProGluValLeuAlaArgHisLysAlaAspPheProAsp-317
 319-AspThrPheSerProGluLysLysPheGlyGly-329

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347-LeuThrAlaGlnLys-351

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AMPHI Regions - AMPHI

25-ValProAspGlyValLys-30

34-TrpThrLeuLeuAlaMetPheValGlyValIleAlaAlaIleIle-48

76-GlyAlaAlaMetSerAspAlaLeuSerAlaPhe-86

155-HisProIleMetGlnSerIleAlaGlySerTyrGlySerAsnProAlaLys-171

180-TyrLeuAlaLeuVal-184

204-ProLeuIleValAsnLeuIleAlaGluAsnLeuGly-215

233-GlyValIleAlaPhePhe-238

265-ArgLeuArgGluMetGlyLysMetSer-273

280-AlaValIlePheGlyIle-285

355-LeuGlyLeuIleLysTrpPheSerGlyValLeuAlaGluSerValGlyGlyLeu-372

398-ThrAlaHisIleThrAlaMetPheGlyAlaPhePheAla-410

452-TyrThrThrMetGlyGluTrpTrp-459

Antigenic Index - Jameson-Wolf

25-ValProAspGlyValLysProGln-32

71-ThrAlaAspLysProGlyAlaAlaMet-79

122-GlyArgLysThrLeuGlyIle-128

143-ThrProSerAsnThrAlaArgGlyGlyGly-152

163-GlySerTyrGlySerAsnProAlaLysGlyThrGluGlyLysMetGlyLys-179

187-HisSerAsnProIleSer-192

213-AsnLeuGlySerSerPhe-218

248-TyrProProGluIleLysGluThrProAsn-257

261-PheAlaLysAspArgLeuArgGluMetGlyLysMetSerAlaAspGluIle-277

328-AspValLeuLysGluLysSerAlaTrp-336

Hydrophilic Regions - Hopp-Woods

71-ThrAlaAspLysProGlyAlaAlaMet-79

146-AsnThrAlaArgGly-150

168-AsnProAlaLysGlyThrGluGlyLysMetGlyLys-179

250-ProGluIleLysGluThrProAsn-257

261-PheAlaLysAspArgLeuArgGluMetGlyLysMetSerAlaAspGluIle-277

328-AspValLeuLysGluLysSerAlaTrp-336

930-1

AMPHI Regions - AMPHI

8-LeuProAsnIleArg-12

69-AsnThrGlyGluThrValAsnGlnLeuMetGly-79

121-LeuHisAlaGlyAsnIleAsnGlnIleMetSerLeu-132

147-IleLeuAlaAlaPro-151

165-ProSerTyrLeuArgSerIleArgIle-173

199-AspLeuLeuAsnLeuArgAsp-205

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207-GluGlnGlyLeuGluAsnLeuLysArgLeuProThr-218

280-SerAspMetPheTyr-284

288-GlyArgSerIleGlyGlyThrProAsp-296

333-ArgTyrHisGlnAlaValSerGlyLeuSerGluValTyrAsp-346

400-TrpLeuAlaGluLeu-404

427-MetLysAspAlaLeuArgAlaProGluGluAlaPheGlyGluGly-441

472-HisAlaGlnTrpAsnLys-477

Antigenic Index - Jameson-Wolf

-342-

32-SerProAsnProAlaGluIleArgMetGlnGlnAspIleGlnGlnArgGlnArgGluGluGlnLeuArgGlnT
hrMetGlnProGluSerAspValArgLeuHisGlnLysAsnThrGlyGluThr-73
77-LeuMetGlyAspAspSerSerGln-84
93-ValLeuGluGlyGluHisHisAla-100
108-ArgAlaLeuArgGluThrGly-114
118-GlyLysCysLeuHisAlaGlyAsn-125
151-ProGlnAspLeuAsnSerGlyLysLeu-159
171-IleArgIleAspArgSerAsnAspAspGlnThrHis-182
191-AsnLysPheProThrArgSerAsnAspLeuLeuAsn-202

204-ArgAspLeuGluGlnGlyLeuGluAsnLeuLysArgLeuProThrAlaGluAlaAspLeu-223
228-ValGluGlyGluProAsnGlnSerAspVal-237
242-ArgGlnArgLeuLeuPro-247
252-ValGlyMetAspAsnSerGlySerGluAlaThrGlyLysTyrGlnGly-267
273-AlaAspAsnProLeuGlyLeu-279
287-TyrGlyArgSerIleGlyGlyThrProAspGluGluSerPheAspGlyHisArgLysGluGlyGlySerAsn
-310
329-HisAsnGlyTyrArg-333
343-GluValTyrAspTyrAsnGlyLysSerTyrAsnThrAspPheGlyPhe-358
362-LeuTyrArgAspAlaLysArgLysThr-370
377-TrpMetArgGluThrLysSerTyrIleAspAspAlaGluLeuThrValGlnArgArgLysThrAla-398
408-GluTyrIleGlyArgSerThrAlaAspPheLysLeuLysTyrLysArgGlyThrGlyMetLysAspAlaLeu
ArgAlaProGluGluAlaPheGlyGluGlyThrSerArg-444
451-SerAlaAspValAsnThrPro-457
474-GlnTrpAsnLysThrProLeuThrSerGlnAspLysLeuAla-487
492-HisThrValArgGlyPheAspGlyGluMet-501

503-LeuSerAlaGluArgGlyTrpTyrTrpArgAsnAspLeuSerTrpGlnPheLysProGlyHis-523
535-SerGlyGlnSerAlaLys-540
572-ArgAlaLeuLysLysProGluPhePheGlnSerArgLysTrpAlaSerGly-588

Hydrophilic Regions - Hopp-Woods

34-AsnProAlaGluIleArgMetGlnGlnAspIleGlnGlnArgGluGluGlnLeuArgGln-55

57-MetGlnProGluSerAspValArgLeuHisGlnLysAsnThrGlyGluThr-73
78-MetGlyAspAspSerSerGln-84
93-ValLeuGluGlyGluHisHisAla-100
108-ArgAlaLeuArgGluThrGly-114
152-GlnAspLeuAsnSerGlyLys-158
171-IleArgIleAspArgSerAsnAspAspGlnThrHis-182
193-PheProThrArgSerAsnAsp-199

204-ArgAspLeuGluGlnGlyLeuGluAsnLeuLysArgLeuProThrAlaGluAlaAspLeu-223
228-ValGluGlyGluProAsnGlnSer-235
254-MetAspAsnSerGlySerGluAlaThrGly-263

291-IleGlyGlyThrProAspGluGluSerPheAspGlyHisArgLysGluGlyGlySer-309
345-TyrAspTyrAsnGly-349

362-LeuTyrArgAspAlaLysArgLysThr-370
377-TrpMetArgGluThrLysSerTyrIleAspAspAlaGluLeuThrValGlnArgArgLysThr-397
413-SerThrAlaAspPheLysLeuLysTyrLysArgGlyThrGlyMetLysAspAlaLeuArgAlaProGluGlu
AlaPheGly-439

479-ProLeuThrSerGlnAspLysLeuAla-487

495-ArgGlyPheAspGlyGluMet-501

503-LeuSerAlaGluArg-507

572-ArgAlaLeuLysLysProGluPhePheGln-581

931-2

AMPHI Regions - AMPHI

43-LysAlaProLysThrValAlaAsnPheValArgTyrAlaArgLys-57

65-PheHisArgValIleAspGly-71

81-GluAspLeuAlaGlnLysAlaSerAspLys-90

94-AsnGluSerGlyAsnGlyLeuLysAsnThr-103

142-ThrValPheGlyArgValGluSerGlyMetAsnThrValSerLysIleAlaArgValLysThrAlaThrArg
GlyPhe-167

Antigenic Index - Jameson-Wolf

1-MetLysProLysPhe-5

30-ThrAspMetGlyAsn-34

38-ValLeuAspGluSerLysAlaProLysThr-47

53-ArgTyrAlaArgLysGlyPheTyrAspAspThrValPhe-65

76-GlyGlyGlyLeuThrGluAspLeuAlaGlnLysAlaSerAspLysAlaValAlaAsnGluSerGlyAsnGlyL
euLysAsnThrAla-104

110-AlaArgThrThrAlaProAspSerAlaThr-119

128-AspAsnAlaSerLeuAspTyrLysAsnGlyGlnTyr-139

145-GlyArgValGluSerGlyMetAsnThrVal-154

156-LysIleAlaArgValLysThrAlaThrArgGlyPhe-167

176-ValLysIleArgArg-180

Hydrophilic Regions - Hopp-Woods

1-MetLysProLysPhe-5

30-ThrAspMetGlyAsn-34

38-ValLeuAspGluSerLysAlaProLysThr-47

78-GlyLeuThrGluAspLeuAlaGlnLysAlaSerAspLysAlaValAlaAsnGluSerGlyAsnGlyLeuLysA
snThrAla-104

113-ThrAlaProAspSerAlaThr-119

130-AlaSerLeuAspTyrLysAsn-136

145-GlyArgValGluSerGlyMet-151

156-LysIleAlaArgValLysThrAlaThr-164

176-ValLysIleArgArg-180

932

AMPHI Regions - AMPHI

27-AspAlaAlaSerPheTrpGluLeuLysAsn-36

38-AlaAsnProTyrPro-42

46-SerAlaAlaLeuAspGlnTyrProSer-54

60-GlnLeuLysAspMetGlnGluCys-67

Antigenic Index - Jameson-Wolf

18-PheGlyGlyPheLysProAsnProTrpAsp-27

34-LeuLysAsnTyrAlaAsnProTyrProGlySer-44

50-AspGlnTyrProSerLysAlaArgArgGlnLeuLysAspMetGlnGluCysGlyTyrAspProIleAspG
lyGlyLysSerGluAlaAspAlaCysLeuArgLysLysGlyTrpCysArgLysGlyPheAspProTyrProGluAs
nLysLysTyrGluTrpProArgGluGluGlyLysThrLys-112

Hydrophilic Regions - Hopp-Woods

52-TyrProSerLysAlaArgArgGlnLeuLysAspMetGlnGluCysGlyTyrAspProIleAspGlyGlyL
ysSerGluAlaAspAlaCysLeuArgLysLysGlyTrpCys-89

91-LysGlyPheAspProTyrProGluAsnLysLysTyrGluTrpProArgGluGluGlyLysThrLys-112

933

AMPHI Regions - AMPHI

6-LysThrSerGluTyr-10
 37-GlnPheGluAsnIleAsnAsnSerLysLys-46
 61-GlyPheAlaArgGlyLeu-66
 75-ThrGluGluGlnIleArgLysTyrPheLysGluCysPheAsn-88
 94-ArgAspTyrSerThrCysGlnAla-101
 133-SerValGlyAsnTyrThrGluTrpAlaAsnGlnValIleHisHisIleGluAsnTyrValSerPheAlaAla
 HisLeuTyrSerGlyLeuAspProPheHisTyrIleGluVal-170
 261-GluAsnProIleAspAspLeuLysSerLeuAspGlyHisGlnIleIleLysValAsn-279
 308-GlyPhePheThrLys-312
 355-TrpLeuArgValIleAspGlyHisSerAsn-364
 373-ProValGluGlyTyrArgLysGly-380
 430-AlaGlyValTyrAlaThrTrpHis-437
 451-TrpMetGlnTyrGln-455
 466-GlyThrGluArgPheThr-471
 473-LysGlyIleThrAlaSer-478
 482-GlyTyrAsnAlaLeuLeuAla-488
 547-LeuTyrLysAsnIleAlaIleGlu-554
 556-PheAlaAlaValAsn-560
 605-PheAsnArgGlnThrGly-610

Antigenic Index - Jameson-Wolf

1-LysLysLeuArgAspLysThrSerGluTyrTrpLysLysGluThr-15
 19-ThrGluAspAsnProLysValProPro-27
 32-TyrProArgThrTyrGln-37
 39-GluAsnIleAsnAsnSerLysLysIleSer-48
 50-TyrAspGlnGluTyrThrGluGlyTyr-58
 67-GlyValAlaLysArgAsnGlyAspThrGluGluGlnIleArgLysTyrPheLys-84
 86-CysPheAsnSerAsnThrLysIleArgAspTyrSerThrCysGlnAlaGluLysPheGlySerHisPro-108
 118-LeuGlyProLysIleLysAsnSerHisIleAsnSerGluIle-131
 159-TyrSerGlyLeuAspPro-164
 169-GluValThrAspAsnSerHis-175
 184-AspGluPheArgLeuGluAsnSerLeuTrpGluProArgTrpAspSerAsnValGlyLysLeuLysThrThr
 AsnAlaAspIleArgPheAsnThrLysSerGluSerLeuLeuValLysGluAspTyrAlaGlyGlyAlaArgPheA
 rgPheAlaTyrAspProLysGluAlaLysAsn-243
 249-GluLysAsnValThrGlyThrSer-256
 259-IlePheGluAsnProIleAspAspLeuLysSerLeuAspGlyHisGlnIleIle-276
 278-ValAsnGlyThrAlaAspLysHisAlaPheArgLeuSerGlyLysHisGlnLysGly-296
 302-LeuGlnGlnArgProGluGlyPhe-309
 312-LysValGlnGluArgAspAspMet-319
 336-ArgLeuAsnAsnLysAsnSerAspIlePheAspArgThrLeuProArgLysGlyLeu-354
 359-IleAspGlyHisSerAsnGlnTrpValGlnGlyLysThrAlaProValGluGlyTyrArgLysGlyVal-38
 1
 391-GlnAsnGluSerAsnGlnLeu-397
 402-MetGlyGlyGlnAlaGluGlnArgSerThrPheHisAsnProAspThrAspAsnLeuThr-421
 423-GlyAsnValLysGly-427
 439-LeuGlnAspLysGlnThrGlyAlaTyrAlaAspSer-450
 455-GlnArgPheArgHisArgIleAsnThrGluAspGlyThrGluArgPheThrSerLysGlyIleThrAla-47
 7
 490-HisPheThrLysLysGlyAsnSerLeu-498
 513-ValAsnGlyLysPheSerAspSerGluAsnAla-523
 528-LeuGlySerArgGlnLeuGlnThr-535
 566-LysProPheGlyValGluMetAspGlyGluArgArgValIleAsnAsnLysThrAlaIleGluSer-587
 593-ValLysIleLysSer-597

604-ThrPheAsnArgGlnThrGlyLysHisHisGlnAlaLysGlnGly-618

Hydrophilic Regions - Hopp-Woods

1-LysLysLeuArgAspLysThrSerGluTyrTrpLysLysGluThr-15
 20-GluAspAsnProLys-24
 42-AsnAsnSerLysLysIleSer-48
 67-GlyValAlaLysArgAsnGlyAspThrGluGluGlnIleArgLysTyrPheLys-84
 91-ThrLysIleArgAspTyrSer-97
 100-GlnAlaGluLysPheGly-105
 120-ProLysIleLysAsn-124
 184-AspGluPheArgLeuGlu-189
 195-ProArgTrpAspSerAsnValGlyLysLeuLysThrThrAsnAlaAspIleArgPheAsnThrLysSerGlu
 SerLeuLeuValLysGluAspTyrAlaGly-228
 236-TyrAspProLysGluAlaLysAsn-243
 250-LysAsnValThrGly-254
 262-AsnProIleAspAspLeuLysSerLeuAsp-271
 280-GlyThrAlaAspLysHisAlaPhe-287
 289-LeuSerGlyLysHisGlnLys-295
 303-GlnGlnArgProGluGlyPhe-309
 313-ValGlnGluArgAspAspMet-319
 337-LeuAsnAsnLysAsnSerAspIlePheAsp-346
 375-GluGlyTyrArgLysGlyVal-381
 392-AsnGluSerAsnGln-396
 405-GlnAlaGluGlnArgSerThrPheHis-413
 415-ProAspThrAspAsnLeuThr-421
 439-LeuGlnAspLysGlnThr-444
 455-GlnArgPheArgHisArgIleAsnThrGluAspGlyThrGluArgPheThrSer-472
 490-HisPheThrLysLysGlyAsnSer-497
 516-LysPheSerAspSerGluAsnAla-523
 568-PheGlyValGluMetAspGlyGluArgArgValIleAsn-580
 593-ValLysIleLysSer-597
 607-ArgGlnThrGlyLysHisHisGlnAlaLysGlnGly-618

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AMPHI Regions - AMPHI

41-ValSerAspLysTrpAla-46
 56-AlaProArgValVal-60
 72-LeuGluHisSerLeuArgAsp-78
 87-LeuIleAlaSerLeuAlaAspLeuTyrAlaLysLeu-98
 111-AlaLeuLeuAlaLysLeuAlaGlyArgProAlaGluAlaValAlaArgTyrArgGlu-129
 158-GluArgHisPheAlaGlu-163
 172-ProValLeuGluAsnValGlyArgPheArgLysLysThrGlu-185
 375-LysArgLeuGlyGluSerAlaThrValPheGlyGlyTrpGlnPheVal-390
 415-AlaGlyTrpAlaGlnGluTrpArgGlnLeuGlyGlyLeu-427
 435-TyrAlaArgArgAsnTyrLysGlyIleAlaAlaPhe-446

Antigenic Index - Jameson-Wolf

27-AlaIleLeuAspAspLysAlaLeu-34
 39-ArgSerValSerAspLysTrpAlaGluSerAspTrpLysValGluAsnAspAlaProArgValValAspGlyA
 spPhe-64
 70-LysMetLeuGluHisSerLeuArgAspAlaLeuAsnGlyAsnGln-84
 97-LysLeuProAspTyrAspAla-103
 108-ArgAlaArgAlaLeu-112
 116-LeuAlaGlyArgProAlaGluAlaValAlaArgTyrArgGluLeuHisGlyGluAsnAlaAlaAspGluArg
 IleLeu-141

-346-

145-AlaAlaAlaGluPheAspAspPheArgLeuLysSerAlaGluArgHisPheAlaGluAlaAlaLysLeuAsp
Leu-169

176-AsnValGlyArgPheArgLysLysThrGluGly-186

192-PheSerGlyGlyIle-196

199-AlaValAsnArgAsnAlaAsnAsnAlaAla-208

210-GlnTyrCysArgGlnAsnGlyGlyArgGln-219

224-SerArgAlaGluArgAlaAla-230

236-IleGluAlaGluLysLeuThrProLeuAlaAsp-246

253-ArgSerAsnIleGlyGlyThrSerTyr-261

263-PheSerLysLysSerAlaTyrAspAspGlyPheGlyArg-275

279-GlyTrpGlnTyrLysAsnAlaArgGlnThr-288

300-SerGlySerAspGlyPheAspAlaLysThrLysArgValAsnAsnArgArgLeuProProTyr-320

332-HisThrTyrArgProAsnProGlyTrp-340

347-GluHisTyrArgGlnArgTyrArgGluGlnAspArgAlaGluTyrAsnAsnGlyArgGlnAspGlyPheTyr
-370

373-SerAlaLysArgLeuGlyGlu-379

392-PheValProLysArgGluThrVal-399

406-AlaAlaTyrArgArgAsnGlyValTyrAlaGly-416

425-GlyGlyLeuAsnSerArgValSerAlaSerTyrAlaArgArgAsnTyrLysGly-442

448-ThrGluAlaGlnArgAsnArgGluTrpAsn-457

463-SerHisAspLysLeuSerTyrLysGly-471

480-PheGlyArgThrGluSerAsnValProTyrAlaLysArgArgAsnSerGlu-496

501-AlaAspTrpArgPhe-505

Hydrophilic Regions - Hopp-Woods

27-AlaIleLeuAspAspLysAlaLeu-34

39-ArgSerValSerAspLysTrpAlaGluSerAspTrpLysValGluAsnAspAlaProArgValValAsp-61

70-LysMetLeuGluHisSerLeuArgAspAlaLeuAsn-81

108-ArgAlaArgAlaLeu-112

116LeuAlaGlyArgProAlaGluAlaValAlaArgTyrArgGluLeuHisGly-132

134-AsnAlaAlaAspGluArgIleLeu-141

145-AlaAlaAlaGluPheAspAspPheArgLeuLysSerAlaGluArgHisPheAlaGluAlaAlaLysLeuAsp
Leu-169

176-AsnValGlyArgPheArgLysLysThrGluGly-186

200-ValAsnArgAsnAlaAsn-205

212-CysArgGlnAsnGlyGlyArgGln-219

224-SerArgAlaGluArgAlaAla-230

236-IleGluAlaGluLysLeuThrPro-243

265-LysLysSerAlaTyrAspAspGlyPheGly-274

283-LysAsnAlaArgGlnThr-288

303-AspGlyPheAspAlaLysThrLysArgValAsnAsnArgArgLeuPro-318

348-HisTyrArgGlnArgTyrArgGluGlnAspArgAlaGluTyrAsnAsnGlyArgGlnAsp-367

373-SerAlaLysArgLeuGlyGlu-379

393-ValProLysArgGluThrVal-399

407-AlaTyrArgArgAsnGly-412

435-TyrAlaArgArgAsnTyrLys-441

449-GluAlaGlnArgAsnArgGluTrp-456

463-SerHisAspLysLeuSerTyr-469

480-PheGlyArgThrGluSer-485

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489-TyrAlaLysArgArgAsnSerGlu-496

936-1

AMPHI Regions - AMPHI

10-ThrLeuIleAlaAlaIle-15

22-GlyCysValSerAlaVal-27

100-GlnPheValGlyGlnIle-105

112-AlaGluGlyValTyrAsnTyrIleThrValAlaSerLeuProArgThrAlaGlyAspIleAlaGlyAsp-13

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Antigenic Index - Jameson-Wolf

1-MetLysProLysProHisThrVal-8

33-ValGlyAlaLysSerAlaValAspArgArgThrThrGlyAlaGlnThrAspAspAsnValMet-53

56-ArgIleGluThrThrAlaArgSerTyrLeuArgGlnAsnAsnGlnThrLysGlyTyr-74

94-AlaThrGluGlyGluLysGlnPhe-101

106-AlaArgSerGluGlnAlaAla-112

124-LeuProArgThrAlaGlyAspIleAlaGlyAspThrTrpAsnThrSerLysValArgAla-143

149-SerProAlaThrGlnAlaArgValLys-157

172-ThrProGluGluGlnAlaGlnIleThr-180

Hydrophilic Regions - Hopp-Woods

1-MetLysProLysProHisThr-7

37-SerAlaValAspArgArgThrThrGlyAlaGlnThrAspAspAsnValMet-53

56-ArgIleGluThrThrAla-61

68-AsnAsnGlnThrLysGlyTyr-74

94-AlaThrGluGlyGluLysGlnPhe-101

106-AlaArgSerGluGlnAlaAla-112

125-ProArgThrAlaGly-129

152-ThrGlnAlaArgValLys-157

172-ThrProGluGluGlnAlaGlnIle-179

937

AMPHI Regions - AMPHI

6-LeuProAlaLeuProAlaIleLeuProLeuSerThr-17

190-AsnGlySerLysThrLeuSer-196

Antigenic Index - Jameson-Wolf

27-AspIleMetThrAspLysGlyLysTrpLysLeuGluThr-39

44-LeuAsnSerGluAsnAsnArgAlaGluLeu-53

72-GluIleGlnGluAsnGlySerAsnThrAsp-81

95-GlyAsnThrAspIleTyrGlySerGlySer-104

108-HisGluGluArgLysLeuAspGlyAsnSerLysThrArgAsnLysArgMetSerAsp-126

135-PheLeuLysAspAspLysAsnProAla-143

151-ThrValTyrGluLysSerArgAsnLysAlaSerSerGlyLysSer-165

187-TyrArgIleAsnGlySerLysThrLeuSerAspGlyIleArgTyrLysSerGlyAsnTyr-206

217-AlaAsnAspArgIleSerLeuThrGlyGly-226

231-GlyArgGlnProAspArgThrAspGlyLysArgGluSerSerArgAsnThrSerThr-249

273-ValSerGlyGlnSerSerSerGluLeuLysPhe-283

Hydrophilic Regions - Hopp-Woods

27-AspIleMetThrAspLysGlyLysTrpLysLeu-37

47-GluAsnAsnArgAlaGluLeu-53

72-GluIleGlnGluAsnGlySerAsnThr-80

108-HisGluGluArgLysLeuAspGlyAsnSerLysThrArgAsnLysArgMetSerAsp-126

135-PheLeuLysAspAspLysAsnPro-142

151-ThrValTyrGluLysSerArgAsnLysAlaSerSer-162

193-LysThrLeuSerAspGlyIleArgTyrLysSer-203

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217-AlaAsnAspArgIleSer-222
 232-ArgGlnProAspArgThrAspGlyLysArgGluSerSerArgAsnThr-247
 277-SerSerSerGluLeuLysPhe-283
 939-2

AMPHI Regions - AMPHI

32-AlaThrValCysAla-36
 90-AspGlnAspIleLeu-94
 121-LysIleTyrArgGly-125
 135-CysMetSerCysHisGly-140
 151-SerGluIleGlnAlaTyrProArgLeuGlyGly-161
 169-GluGlnMetAsnAlaTyrLys-175
 185-GluAspIleAlaAsnArgMetSer-192

Antigenic Index - Jameson-Wolf

18-AlaSerProLysAlaAspValGluLysGlyLysGlnVal-30
 40-AlaAlaAspGlyAsnSerGlyIle-47
 66-IleGlyIleArgAspGlyLysArgThrHisGlySerAlaAlaVal-80
 88-LeuSerAspGlnAspIle-93
 102-LysGlnGlnProLysSerGlyGluAlaAsnProLysGluAsnProGluLeuGly-119
 122-IleTyrArgGlyGlyLeuSerAspLysLysValPro-133
 139-HisGlyProSerGlyAlaGlyMetProGlyGlyGlySerGluIleGlnAla-155
 157-ProArgLeuGlyGlyGlnHisGln-164
 172-AsnAlaTyrLysSerGlyGlnArgLysAsnThrIleMetGluAspIleAlaAsnArgMetSerGluGluAspLeuLysAla-198

Hydrophilic Regions - Hopp-Woods

18-AlaSerProLysAlaAspValGluLysGlyLysGlnVal-30
 40-AlaAlaAspGlyAsnSer-45
 67-GlyIleArgAspGlyLysArgThrHisGly-76
 89-SerAspGlnAspIle-93
 103-GlnGlnProLysSerGlyGluAlaAsnProLysGluAsnProGluLeuGly-119
 126-GlyLeuSerAspLysLysValPro-133
 175-LysSerGlyGlnArgLysAsnThrIleMetGluAspIleAlaAsnArgMetSerGluGluAspLeuLysAla-198
 950

AMPHI Regions - AMPHI

33-GlyValHisLysSerAlaHisGly-40
 71-AlaThrValLysLysThrHisLysHisThrLysAla-82

Antigenic Index - Jameson-Wolf

1-MetAsnLysAsnIle-5
 23-AlaAlaAsnLysProAlaSerAsnAlaThrGlyValHisLysSerAlaHisGlySerCysGlyAlaSerLysSerAlaGluGlySerCysGlyAlaAlaGlySerLysAlaGlyGluGlyLysCysGlyGlyLysCysGlyAlaThrValLysLysThrHisLysHisThrLysAlaSerLysAlaLysAlaLysSerAlaGluGlyLysCysGlyGluGlyLysCysGlySerLys-102

Hydrophilic Regions - Hopp-Woods

23-AlaAlaAsnLysProAlaSer-29
 33-GlyValHisLysSerAlaHis-39
 43-GlyAlaSerLysSerAlaGluGlySerCys-52
 55-AlaGlySerLysAlaGlyGluGlyLysCysGlyGluGlyLysCys-69
 71-AlaThrValLysLysThrHisLysHisThrLysAlaSerLysAlaLysAlaLysSerAlaGluGlyLysCysGlyGluGlyLysCysGlySerLys-102
 951

AMPHI Regions - AMPHI

-349-

9-LysMetLeuThrValLeuThrAla-16
 32-AspMetLysGlnProLysGluValGlyLysValPheArgLysGlnGlnArgTyr-49
 64-ValGlyGluArgValAsn-69

129-TrpArgGlnIleGluProIleProGlyLys-138
 157-HisLeuAspGlyLeuGluGluValLeuAla-166
 191-AlaGlnLysAlaSerLysAlaValArgArg-200
 206-GluHisLeuProGluAlaAla-212
 230-GlyAlaLeuGlnArgLeuAlaLysLeu-238
 256-LysTyrProGluIleLeuAspGlyPhePheGlu-266

280-MetGluIleMetAsnLeuValSerLeuHisArgLeuAspAspAla-294
 327-ValIleAspGlyTyrAlaGluLys-334

336-TyrGlyArgGlyThrGlu-341
 364-ValArgGlnTrpLeuLys-369
 397-AlaLeuArgGlnIleGlyArgValArgLysLeuProGluGlnGln-411
 418-AspAsnLeuSerLysIle-423

425-MetLeuAlaLeuSer-429
 436-GluAlaLeuArgGlyLeuAspLysIleIleGluLys-447
 479-SerAspLeuGluArgAlaPheArg-486
 497-AsnLeuGlyTyrSer-501
 565-HisLeuGlyGluVal-569
 581-AspValTrpThrGlnAla-586
 596-TrpArgGluThrLeu-600

Antigenic Index - Jameson-Wolf

25-AlaAlaGlyGlyGlyAlaGlyAspMetLysGlnProLysGluValGlyLysValPheArgLysGlnGlnArgTyrSerGluGluGluIleLysAsnGluArgAlaArgLeu-61

63-AlaValGlyGluArgValAsn-69
 79-ThrAlaLeuGlnLysGlyGlnAla-86
 98-GluArgThrLysSerProGluValAlaGluArgAlaLeuGlu-111
 128-LysTrpArgGlnIleGluProIleProGlyLysAlaGlnLysArgAlaGlyTrpLeuArgAsnValLeuArgGluArgGlyAsnGlnHisLeuAspGlyLeuGluGluValLeuAlaGlnAlaAspGluGlyGlnAsnArgArg-175
 185-ValGlnGlnAspGlyLeuAlaGlnLysAlaSerLysAlaValArgArgAlaAlaLeuLys-204
 221-GlnGlyArgGluLysGluLysAlaIle-229
 234-ArgLeuAlaLysLeuAspThrGluIleLeuPro-244
 252-LeuThrAlaArgLysTyrProGluIleLeuAspGlyPhePheGluGlnThrAspThrGlnAsn-272
 289-HisArgLeuAspAspAlaTyrAla-296
 302-LeuGluArgAsnProAsnAlaAsp-309
 319-AlaAsnArgLysGluGlyAlaSer-326
 330-GlyTyrAlaGluLysAlaTyrGlyArgGlyThrGluGluGlnArgSerArgAla-347
 355-TyrAlaAspArgArgAspTyrAlaLys-363
 366-GlnTrpLeuLysLysValSerAla-373
 377-LeuPheAspLysGlyVal-382
 389-ValGluLeuAspGlyGlyArgAlaAlaLeu-398

400-GlnIleGlyArgValArgLysLeuProGluGlnGlnGlyArgTyrPheThr-416
 430-LysLeuProAspLysArgGluAlaLeuArgGlyLeuAspLysIleIleGluLysProProAlaGlySerAsnThrGluLeuGlnAla-458
 470-ArgLeuGlyLysArgLysLysMetIleSerAspLeuGluArgAlaPheArgLeuAlaProAspAsn-491
 504-ThrAspSerLysArgLeuAspGluGlyPhe-513
 522-IleAsnProAspAspThrAlaValAsnAspSerIle-533

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539-LeuLysGlyAspAlaGluSerAla-546
 551-ArgTyrSerPheGluAsnAspProGluProGluVal-562
 574-GlyGluArgAspGlnAla-579
 588-HisLeuThrGlyAspLysLysIleTrpArgGluThrLeuLysArgHisGlyIleAlaLeuProGlnProSer
 ArgLysProArgLys-616

Hydrophilic Regions - Hopp-Woods

29-GlyAlaGlyAspMetLysGlnProLysGluValGlyLysValPheArgLysGlnGlnArgTyrSerGluGluG
 luIleLysAsnGluArgAlaArgLeu-61

63-AlaValGlyGluArgValAsn-69
 79-ThrAlaLeuGlnLysGlyGlnAla-86
 98-GluArgThrLysSerProGluValAlaGluArgAlaLeuGlu-111
 135-IleProGlyLysAlaGlnLysArgAlaGlyTrp-145
 149-ValLeuArgGluArgGlyAsnGlnHis-157

159-AspGlyLeuGluGluValLeuAlaGlnAlaAspGluGlyGlnAsnArgArg-175
 189-GlyLeuAlaGlnLysAlaSerLysAlaValArgArgAlaAlaLeuLys-204
 221-GlnGlyArgGluLysGluLysAlaIle-229
 234-ArgLeuAlaLysLeuAspThrGluIle-242
 252-LeuThrAlaArgLysTyrProGluIle-260
 265-PheGluGlnThrAspThrGlnAsn-272
 289-HisArgLeuAspAspAlaTyrAla-296
 302-LeuGluArgAsnProAsn-307
 319-AlaAsnArgLysGluGlyAlaSer-326
 331-TyrAlaGluLysAlaTyrGlyArgGlyThrGluGluGlnArgSerArgAla-347
 355-TyrAlaAspArgArgAspTyrAlaLys-363
 389-ValGluLeuAspGlyGlyArgAlaAlaLeu-398

400-GlnIleGlyArgValArgLysLeuProGluGlnGlnGly-412
 430-LysLeuProAspLysArgGluAlaLeuArgGlyLeuAspLysIleIleGluLysProProAla-450
 452-SerAsnThrGluLeuGlnAla-458
 470-ArgLeuGlyLysArgLysLysMetIleSerAspLeuGluArgAlaPheArgLeuAlaProAspAsn-491
 504-ThrAspSerLysArgLeuAspGlu-511
 523-AsnProAspAspThrAlaVal-529
 541-GlyAspAlaGluSer-545
 554-PheGluAsnAspProGluProGluVal-562
 574-GlyGluArgAspGlnAla-579
 590-ThrGlyAspLysLysIleTrpArgGluThrLeuLysArgHisGly-604
 609-GlnProSerArgLysProArgLys-616

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AMPHI Regions - AMPHI

63-SerValAlaThrLeuLeuAsnAsnPheTyrGlyGln-74
 81-ValLeuLysLysLeuAsp-86
 94-PheGluAspMetArgArgIle-100
 116-GluGlnLeuAlaGlnLeu-121
 138-SerValLeuArgGlyIleAsp-144
 163-AlaGlnPheLeuAspAla-168
 179-LysIleLeuAlaVal-183

Antigenic Index - Jameson-Wolf

40-GlnSerTrpLysAlaArgArgAspPheAsnIleValLysGlnAspLeuAspPheSerCys-59

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70-AsnPheTyrGlyGlnThrLeuThrGluGluGluValLeuLysLysLeuAspLysGluGlnMetArgAlaSerP
 heGluAspMetArgArgIleMetPro-102
 104-LeuGlyPheGluAlaLysGlyTyr-111
 129-LeuLysTyrArgLysAspAspHisPheSer-138
 141-ArgGlyIleAspGlyAsnThr-147
 169-TrpGlnThrArgGluGlyAsnLeuAla-177
 184-IleProLysLysAlaGluThrIleSer-192
 199-GlnHisProLysArgGlnThrGlu-206
 213-ArgGlnAlaArgAlaGlu-218

Hydrophilic Regions - Hopp-Woods

41-SerTrpLysAlaArgArgAspPheAsnIleValLysGlnAspLeuAspPhe-57
 76-LeuThrGluGluGluValLeuLysLysLeuAspLysGluGlnMetArgAlaSerPheGluAspMetArgArgI
 leMetPro-102
 104-LeuGlyPheGluAlaLysGly-110
 130-LysTyrArgLysAspAspHisPheSer-138
 169-TrpGlnThrArgGluGlyAsnLeu-176
 184-IleProLysLysAlaGluThrIleSer-192
 200-HisProLysArgGlnThrGlu-206
 213-ArgGlnAlaArgAlaGlu-218
 953

AMPHI Regions - AMPHI

39-AsnThrSerThrAsnValGlyGlyPheTyrGlyLeuThr-51
 75-GlnSerGlySerGlnHisPheThrAspHisLeuLysSerAlaAspIlePheAspAlaAlaGln-95
 151-GlyAspPheSerThrThr-156

Antigenic Index - Jameson-Wolf

22-TyrLysValAspGluTyrHisAla-29
 38-PheAsnThrSerThrAsnVal-44
 54-ValGluPheAspGlnAlaLysArgAspGlyLysIleAspIle-67
 83-AspHisLeuLysSer-87
 95-GlnTyrProAspIleArgPheValSer-103
 105-LysPheAsnPheAsnGlyLysLysLeuValSer-115
 122-MetHisGlyLysThrAlaProValLysLeuLysAlaGluLys-135
 137-AsnCysTyrGlnSerProMetGluLysThrGluValCysGlyGlyAsp-152
 154-SerThrThrIleAspArgThrLysTrpGly-163
 174-LysSerValArgIle-17
 180-IleGlnIleGluAlaAlaLysGln-187

Hydrophilic Regions - Hopp-Woods

22-TyrLysValAspGluTyrHisAla-29
 54-ValGluPheAspGlnAlaLysArgAspGlyLysIleAspIle-67
 83-AspHisLeuLysSer-87
 108-PheAsnGlyLysLysLeuValSer-115
 125-LysThrAlaProValLysLeuLysAlaGluLys-135
 142-ProMetGluLysThrGluValCysGly-150
 155-ThrThrIleAspArgThrLysTrp-162
 174-LysSerValArgIle-178
 180-IleGlnIleGluAlaAlaLysGln-187
 954

AMPHI Regions - AMPHI

48-ArgAlaAlaArgPheArg-53
 57-GlnGlyLeuGlyGlyAspPheGluArgPheLeuLysGly-69
 74-GlnGluAsnLeuAlaLysTyrArgGluAsnIle-84
 100-ProTyrArgValCysLysGlnAla-107

134-TyrGlnAsnTyrArgLysSerMetGlnGluCysArgLysThrIleThr-149

Antigenic Index - Jameson-Wolf

17-GlyGlnGluGlnSerGlnLysAlaAspAlaGlu-27
 35-TyrGlnPheAlaAspGluLysGln-42
 58-GlyLeuGlyGlyAspPheGluArgPheLeuLysGlyGluIleProAsnGlnGluAsnLeuAlaLysTyrArgGluAsnIle-84
 92-AlaAspThrAsnGlyAspAspProTyrArgValCysLys-105
 107-AlaAlaGlnAspAlaGluIleLeuMet-115
 119-ValThrSerGlyGlyGlyGlyThrThrAspLeuAspLysGluSerTyrGlnAsnTyrArgLysSerMetGlnGluCysArgLysThrIleThrGluAlaGluAlaAsnLeuProLysLys-158

Hydrophilic Regions - Hopp-Woods

17-GlyGlnGluGlnSerGlnLysAlaAspAlaGlu-27
 36-GlnPheAlaAspGluLysGln-42
 61-GlyAspPheGluArgPheLeuLys-68
 70-GluIleProAsnGlnGluAsnLeuAlaLysTyrArgGluAsnIle-84
 94-ThrAsnGlyAspAspProTyrArgValCysLys-105
 107-AlaAlaGlnAspAlaGluIleLeuMet-115
 125-GlyThrThrAspLeuAspLysGluSerTyrGlnAsnTyrArgLysSerMetGlnGluCysArgLysThrIleThrGluAlaGluAlaAsnLeuProLysLys-158

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AMPHI Regions - AMPHI

11-SerPhePheAlaLeuValPheAla-18
 39-AlaThrGluValProLysAsnPro-46
 48-AlaPheValAlaLysLeuAlaArgLeuPheArgAsnAla-60
 76-AsnLeuAlaGlyThrValAspAsp-83
 198-GluAspValTyrGluHisCysLeuGlyCysTyrGlnMet-210
 218-TyrArgAspValAlaAsnAspGlu-225
 235-SerAsnArgIleAlaSer-240
 249-GlnAsnMetArgGluLeuMetProArg-257
 335-GluLysGluValArgArgTyrAlaGluAlaAlaAlaArg-367

Antigenic Index - Jameson-Wolf

29-IleAsnProArgTrp-33
 35-LeuSerAspThrAlaThrGluValProLysAsnProAsn-47
 57-PheArgAsnAlaAspArgAla-63
 69-GluSerIleArgThrGluGluAsnLeuAlaGlyThrValAspAspGlyProLeuGlnSerGluLysAspTyr-92
 98-ArgLeuSerArgLeuLysGluLysAlaLys-107
 112-ThrGluGlnGluHisGlyLys-118
 125-HisIleGlyGluGlyGly-130
 136-LeuSerGlnArgSerProGluAlaPheVal-145
 149-TyrLeuTyrArgAsnAspArgProPheSer-158
 166-ValHisGlyGluAsnTyrGluThrThrGlyGluTyrArgVal-179
 182-GlnProAspGlySerVal-187
 190-AlaAlaGlyArgGlyLysIleGlyGluAspValTyr-201
 217-LysTyrArgAspValAlaAsnAspGluGlnLysValTrpAspPheArgLysGluSerAsnArgIleAlaSerAspSerArgAsnSerValPheTyrGlnAsnMetArgGluLeuMetProArgGlyMetLysAlaAsnSer-263
 267-GlyTyrAspAlaAspGlyLeuProGlnLys-276
 280-SerPheAspAsnGlyLysLysArgGlnSerPheGluTyrTyrLeuLysAsnGlyAsn-298
 309-LeuLysAlaAspGlyValThr-315
 329-LeuAspGlyGlyArgIleValArgGluGluLysGlnGlyAspArgLeuProAspPhe-347
 352-GluAsnLeuGluLysGluValArgArgTyrAlaGluAlaAlaAlaArgArgSerGlyGlyArgArgAspLeuSerHis-377

Hydrophilic Regions - Hopp-Woods

38-ThrAlaThrGluValProLysAsnPro-46
 57-PheArgAsnAlaAspArgAla-63
 69-GluSerIleArgThrGluGluAsnLeu-77
 80-ThrValAspAspGlyProLeuGlnSerGluLysAspTyr-92
 98-ArgLeuSerArgLeuLysGluLysAlaLys-107
 112-ThrGluGlnGluHisGlyLys-118
 136-LeuSerGlnArgSerProGlu-142
 151-TyrArgAsnAspArgProPhe-157
 169-GluAsnTyrGluThrThrGlyGluTyr-177
 190-AlaAlaGlyArgGlyLysIleGlyGluAspValTyr-201
 217-LysTyrArgAspValAlaAsnAspGluGlnLysValTrpAspPheArgLysGluSerAsnArgIleAlaSer
 AspSerArgAsn-244
 250-AsnMetArgGluLeuMetProArgGlyMetLys-260
 268-TyrAspAlaAspGlyLeuPro-274
 282-AspAsnGlyLysLysArgGlnSer-289
 309-LeuLysAlaAspGlyValThr-315
 331-GlyGlyArgIleValArgGluGluLysGlnGlyAspArgLeuPro-345
 352-GluAsnLeuGluLysGluValArgArgTyrAlaGluAlaAlaArgArgSerGlyGlyArgArgAspLeu
 SerHis-377

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AMPHI Regions - AMPHI

34-AspAsnProThrAlaGlyGluSerValArgSerValSerGluProIleGln-50
 86-ProGluAspTyrThrArgIleValAlaAsp-95
 127-TyrAspGlnSerGlyAsp-132
 176-GlyArgArgLeuGlnSerValSerArgThrAlaGluMet-188
 343-IleSerAspThrLeuGln-348
 483-TyrTyrSerLeuAsnArgPhe-489
 491-SerGlnGluAlaArgArgVal-497
 500-ThrLeuProIleVal-504
 521-GlyGluValLeuGlnThrLeuGluProArgLeu-531
 541-GlnAsnAspLeuProAsnPheAsp-548
 572-AsnThrAlaAsnSerLeuSerAlaAlaValGlnSer-583
 616-ValGlyLysLysPro-620
 693-AspLysLeuSerGln-697
 723-LysLysProIleGlu-727
 769-AspLeuSerSerValGlyArgAsnPro-777

Antigenic Index - Jameson-Wolf

28-ValAlaAlaGluGluThrAspAsnProThrAlaGlyGluSerValArgSerValSerGluProIleGln-50
 55-SerLeuGlySerThr-59
 63-CysSerAsnGluSerGlySerProGluArgThrGluAlaAlaValGlnGlySerGlyGluAlaSerIleProG
 luAspTyrThrArgIleValAlaAspArgMetGluGlyGlnSerGlnValGlnValArgAlaGluGly-109
 111-ValValValGluArgAsnArgThrThrLeuAsn-121
 123-AspTrpAlaAspTyrAspGlnSerGlyAspThrValThrAlaGlyAspArgPheAlaLeuGlnGlnAspGly
 ThrLeuIleArgGlyGluThrLeu-154
 158-LeuGluGlnGlnThrGlyGluAlaHisAsnValArgMetGluIleGluGlnGlyGlyArgArgLeuGlnSer
 ValSerArgThrAlaGluMetLeuGlyGluGlyHisTyrLysLeuThrGluThrGlnPheAsnThrCysSerAlaG
 lyAspAlaGlyTrp-211
 216-AlaSerValGluAlaAspArgGluLysGlyIleGly-227
 249-PheProLeuAspGlyAsnArgLysSerGlyLeu-259
 265-SerAlaGlySerAspGlyVal-271
 293-ValIleGlyGluArgGlyAlaValPheAspGlyGlnValArgTyrLeuArgProAspTyrAlaGlyGlnSer
 Asp-317

321-LeuProHisAspLysLysSerGlyArgAsnAsnArgTyrGlnAla-335
 337-TrpGlnHisArgHisAspIleSerAspThrLeu-347
 352-AspPheAsnGlnValSerAspSerGlyTyrTyrArgAspPheTyrGlyAsnLysGluIleAlaGlyAsnVal
 AsnLeuAsnArgArgValTrp-382
 384-AspTyrGlyGlyArgAlaAlaGlyGlySerLeu-394
 407-AlaAsnGlnSerGlyTyrLysAspLysProTyr-417
 425-ValGluTrpArgLysAsnThrGlyArgAla-434
 444-ArgPheSerHisAspSerArgGlnAspGlySerArg-455
 460-ProAspIleLysTrpAspPheSerAsnSerTrpGly-471
 487-AsnArgPheGlySerGlnGluAlaArgArgValSerArg-499
 507-AspSerGlyAlaThrPheGluArgAsnThrArgMetPheGly-520
 538-AlaLysSerGlnAsnAspLeuProAsnPheAspSerSerGluSerSerPheGly-555
 560-PheArgGluAsnLeuTyrTyrGlyAsnAspArgIleAsnThrAlaAsnSer-576
 581-ValGlnSerArgIleLeuAspGlyAlaThrGlyGluGluArgPheArgAlaGlyIleGlyGlnLysPheTyr
 PheLysAspAspAlaValMetLeuAspGlySerValGlyLysLysProArgAsnArgSerAspTrp-626
 631-SerGlySerIleGlySer-636
 642-SerSerIleHisTyrAsnGlnAsnAspLysArgAlaGluAsn-655
 660-AlaSerTyrArgProAlaGlnGlyLysValLeuAsnAlaArgTyrLysTyrGlyArgAsnGluLysIleTyr
 LeuLysSerAspGlySerTyrPhe-691
 693-AspLysLeuSerGln-697
 718-TyrGlyPheGluAlaLysLysProIleGlu-727
 732-AlaGluTyrLysSerSerCysGlyCysTrp-741
 751-ValThrGlyGluAsnThrTyrLysAsn-759
 766-GlnLeuLysAspLeuSerSerValGlyArgAsnProAlaAspArgMetAspVal-783
 794-LeuSerAlaGlyArgAsnLysArgPro-802

Hydrophilic Regions - Hopp-Woods

28-ValAlaAlaGluGluThrAspAsnProThrAlaGlyGluSerValArgSerValSerGluProIleGln-50
 65-AsnGluSerGlySerProGluArgThrGluAlaAlaVal-77
 79-GlySerGlyGluAlaSerIleProGluAspTyrThr-90
 93-ValAlaAspArgMetGluGlyGlnSer-101
 103-ValGlnValArgAlaGluGly-109
 111-ValValValGluArgAsnArgThrThrLeu-120
 125-AlaAspTyrAspGlnSerGlyAspThrValThrAlaGlyAspArgPheAlaLeu-142
 147-ThrLeuIleArgGlyGluThr-153
 160-GlnGlnThrGlyGluAlaHisAsnValArgMetGluIleGluGlnGlyGlyArgArgLeuGlnSerValSer
 ArgThrAlaGluMetLeuGly-190
 192-GlyHisTyrLysLeuThrGlu-198
 216-AlaSerValGluAlaAspArgGluLysGlyIleGly-227
 250-ProLeuAspGlyAsnArgLysSerGly-258
 266-AlaGlySerAspGlyVal-271
 294-IleGlyGluArgGlyAlaVal-300
 305-ValArgTyrLeuArg-309
 323-HisAspLysLysSerGlyArgAsnAsnArgTyrGlnAla-335
 337-TrpGlnHisArgHisAspIleSerAsp-345
 410-SerGlyTyrLysAspLysProTyr-417
 425-ValGluTrpArgLysAsnThrGlyArgAla-434
 445-PheSerHisAspSerArgGlnAspGlySerArg-455
 490-GlySerGlnGluAlaArgArgValSerArg-499
 510-AlaThrPheGluArgAsnThrArg-517
 539-LysSerGlnAsnAsp-543
 548-AspSerSerGluSer-552
 569-AspArgIleAsnThr-573
 589-AlaThrGlyGluGluArgPheArgAla-597
 604-TyrPheLysAspAspAlaValMet-611

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615-SerValGlyLysLysProArgAsnArgSerAsp-625
 648-GlnAsnAspLysArgAlaGluAsn-655
 662-TyrArgProAlaGln-666
 674-TyrLysTyrGlyArgAsnGluLysIleTyrLeuLysSerAspGly-688
 720-PheGluAlaLysLysProIleGlu-727
 732-AlaGluTyrLysSer-736
 766-GlnLeuLysAspLeuSerSerValGlyArgAsnProAlaAspArgMetAspVal-783
 795-SerAlaGlyArgAsnLysArgPro-802
 959

AMPHI Regions - AMPHI

56-AlaAlaLeuAlaArgValGlyGly-63

Antigenic Index - Jameson-Wolf

24-AlaHisHisAspGlyHisGlyAspAspHisGlyHis-36
 38-AlaHisGlnHisAsnLysGlnAspLysIleIleSer-49
 51-AlaGlnAlaGluLysAlaAlaLeu-58
 60-ArgValGlyGlyLysIleThrAspIleAspLeuGluHisAspAsnGlyArgProHisTyrAspValGluIleValLysAsnGlyGlnGluTyr-90
 94-ValAspAlaArgThrGlyArgValIleSerSerArgArgAsp-108

Hydrophilic Regions - Hopp-Woods

27-AspGlyHisGlyAspAspHisGlyHis-36
 40-GlnHisAsnLysGlnAspLysIleIleSer-49
 51-AlaGlnAlaGluLysAlaAlaLeu-58
 61-ValGlyGlyLysIleThrAspIleAspLeuGluHisAspAsnGlyArgProHisTyr-79
 82-GluIleValLysAsnGlyGlnGluTyr-90
 94-ValAspAlaArgThrGlyArg-100
 102-IleSerSerArgArgAsp-108
 960

AMPHI Regions - AMPHI

24-AlaProArgLeuLeuProSerPheThrAspPro-34
 39-LeuSerAlaProGlyGlyTyrIleVal-47
 58-IleGluLysLeuAlaLysGlnProGluTyrAlaTyrLeuLysGlnLeuGlnValAlaLysAsnValAsn-80
 137-PheAlaSerLeuAlaSer-142
 154-AspValGlyLysThrLeuLysGluLeuGlyArgSerArgThr-167
 189-LeuAlaThrTrpSerGlu-194
 230-AsnIleLeuAlaAlaLeuValAsnThrAla-239
 245-SerLysIleLysGly-249
 257-HisLysIleAlaHisAlaValAlaGlyCysAla-267
 280-AlaIleGlyAlaAlaValGlyGluIleValGlyGlu-291
 314-IleThrAlaTyrAlaLys-319
 338-GlnThrAlaGlnAsnAla-343

345-GluAsnAsnAlaValLysAlaValValThr-354
 359-ValTyrLysValAlaArgLysGly-366
 387-AsnLeuAlaAspAsnLeuThrThrLeuPheAsp-397
 418-AsnArgAlaAsnLysGlyGluAlaAlaGlnLysValLysGluValLeu-433
 460-LysGlnLeuAlaGlnIle-465

Antigenic Index - Jameson-Wolf

11-LeuTyrArgArgGlySerValLysProProLeu-21
 23-GluAlaProArgLeuLeuProSerPheThrAsp-33
 35-ValValProLysLeuSerAlaProGly-43
 48-AspIleProLysGlyAsnLeuLysThrGluIleGluLysLeuAlaLysGlnProGlu-66
 77-LysAsnValAsnTrp-81

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87-AlaTyrAspLysTrpAspTyrLysGlnGluGlyLeuThr-99
 150-AsnAsnLysGlyAspValGlyLysThrLeuLysGluLeuGlyArgSerArgThrValLys-169
 180-ValSerAsnLysLeuGlyAla-186

 193-SerGluThrProTrp-197
 218-ValAsnGlyGlySerLeuLysAspAsnLeuGlu-228
 239-AlaHisGlyGluAlaAlaSerLysIleLysGlyLeuAsp-251
 270-AlaAlaAsnLysGlyLysCysGlnAspGlyAla-280
 292-AlaLeuValLysAsnThrAspPheSerAspMetThrProGluGlnLeuAspLeuGluValLysLys-313
 329-ThrGlyGlyAspValAsnThr-335
 362-ValAlaArgLysGlyLeuLysAsnGlyLysIleAsnValArgAspLeuLysGlnThrLeuLysAspGluGly
 TyrAsnLeu-388

 398-GluThrLeuAspTrpAsnAspAlaLysAla-407
 415-ThrGluLeuAsnArgAlaAsnLysGlyGluAlaAlaGlnLysValLysGluValLeuGluLysAsnArgPro
 TyrIleProAsnLysGlyAlaValPro-447
 451-ThrTyrMetLysAsnAsnProPheGlyLysGln-461
 465-IleSerGluLysThrThrLeuProThrGlnGlnGlyGlnSer-478
 483-LysArgAsnGlnGlyLeuLeuLysThrGlyAspArgPheTyrLeuAspGlyGlnHisLysAsnHisLeu-50
 5

 507-ValPheAspLysAsnGlyAsnPheLys-515
 520-MetAspGlySerLeuAsnGlnMetLysThrGlyAlaAlaLysGlyArgLysLeuAsnLeu-539

Hydrophilic Regions - Hopp-Woods

13-ArgArgGlySerValLys-18

 49-IleProLysGlyAsnLeuLysThrGluIleGluLysLeuAlaLysGlnProGlu-66
 89-AspLysTrpAspTyrLysGlnGluGlyLeuThr-99
 150-AsnAsnLysGlyAspValGlyLysThrLeuLysGluLeuGlyArgSerArgThrValLys-169
 221-GlySerLeuLysAspAsnLeuGlu-228
 239-AlaHisGlyGluAlaAlaSerLysIleLysGlyLeuAsp-251
 270-AlaAlaAsnLysGlyLysCysGlnAsp-278

 292-AlaLeuValLysAsnThrAspPheSerAspMetThrProGluGlnLeuAspLeuGluValLysLys-313
 362-ValAlaArgLysGlyLeuLysAsnGlyLysIleAsnValArgAspLeuLysGlnThrLeuLysAspGluGly
 TyrAsn-387
 398-GluThrLeuAspTrpAsnAspAlaLysAla-407
 416-GluLeuAsnArgAlaAsnLysGlyGluAlaAlaGlnLysValLysGluValLeuGluLysAsnArgPro-43
 8

 465-IleSerGluLysThrThrLeu-471
 483-LysArgAsnGlnGly-487
 499-GlyGlnHisLysAsnHis-504
 507-ValPheAspLysAsnGlyAsn-513
 522-GlySerLeuAsnGln-526

 528-LysThrGlyAlaAlaLysGlyArgLysLeuAsnLeu-539

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AMPHI Regions - AMPHI
 6-PheProSerLysVal-10
 13-ThrAlaIleLeuAlaThrPheCysSerGly-22
 46-AsnGlyGlnGluIleAsnGlyPheLysAlaGlyGluThrIleTyrAspIle-62

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90-LysValValThrAsnLeuThrLysThrVal-99
 118-GluLysLeuThrThr-122
 138-LeuAspGluThrThrAsnAlaLeuAsnLysLeuGlyGluAsnIleThrThrPheAla-156
 170-LeuGluAlaValAlaAspThrValAspLysHisAlaGluAlaPheAsnAspIleAlaAspSerLeuAsp-192
 200-GluAlaValLysThrAlaAsnGluAlaLysGlnThrAlaGlu-213
 273-AlaArgIleAspSerLeuAspLysAsnValAlaAsnLeuArgLysGluThrArgGlnGlyLeu-293
 300-SerGlyLeuPheGlnProTyrAsnVal-308

Antigenic Index - Jameson-Wolf

27-ThrSerAspAspAspValLysLysAlaAla-36
 45-AsnAsnGlyGlnGluIleAsnGlyPheLysAlaGlyGluThr-58
 60-TyrAspIleGlyGluAspGlyThrIleThrGlnLysAspAlaThrAlaAlaAspValGluAlaAspAspPheLys-84
 98-ThrValAsnGluAsnLysGlnAsnValAspAlaLysValLysAlaAlaGluSerGluIleGluLysLeuThrThrLysLeuAlaAspThrAspAlaAlaLeuAlaAspGluThrThrAsnAlaLeuAsnLysLeuGlyGluAsnIleThr-153
 155-PheAlaGluGluThrLysThrAsnIleValLysIleAspGluLysLeuGluAlaValAlaAspThrValAspLysHisAlaGluAlaPheAsnAspIleAlaAspSerLeuAspGluThrAsnThrLysAlaAspGluAlaValLysThrAlaAsnGluAlaLysGlnThrAlaGluGluThrLysGlnAsnValAspAlaLysValLysAlaAlaGluThrAlaAlaGlyLysAlaGluAlaAla-237
 239-ThrAlaAsnThrAlaAlaAspLysAlaGluAlaValAla-251
 253-LysValThrAspIleLysThrAsnLysAlaAspIleAlaThrAsnLysAlaAspIleAlaLysAsnSerAlaArgIleAspSerLeuAspLysAsnValAlaAsnLeuArgLysGluThrArgGlnGlyLeuAla-294
 317-ValGlyGlyTyrLysSerGluSer-324
 330-ThrGlyPheArgPhe-334
 348-ThrSerSerGlySerSerAla-354

Hydrophilic Regions - Hopp-Woods

27-ThrSerAspAspAspValLysLysAlaAla-36
 54-LysAlaGlyGluThr-58
 62-IleGlyGluAspGlyThrIleThrGlnLysAspAlaThrAlaAlaAspValGluAlaAspAspPheLys-84
 98-ThrValAsnGluAsnLysGlnAsnValAspAlaLysValLysAlaAlaGluSerGluIleGluLysLeuThrThrLysLeuAlaAspThrAspAlaAlaLeuAlaAspThrAspAlaAlaLeuAspGluThrThrAsnAla-144
 155-PheAlaGluGluThrLysThrAsnIleValLysIleAspGluLysLeuGluAlaValAlaAspThrValAspLysHisAlaGluAlaPheAsnAspIleAlaAspSerLeuAspGluThrAsnThrLysAlaAspGluAlaValLysThrAlaAsnGluAlaLysGlnThrAlaGluGluThrLysGlnAsnValAspAlaLysValLysAlaAlaGluThrAlaAlaGlyLysAlaGluAlaAla-237
 242-ThrAlaAlaAspLysAlaGluAlaValAla-251
 253-LysValThrAspIleLysAlaAspIleAlaThrAsnLysAlaAspIleAlaLysAsnSerAlaArgIleAspSerLeuAspLysAsnValAlaAsnLeuArgLysGluThrArgGlnGlyLeuAla-294
 320-TyrLysSerGluSer-324

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AMPHI Regions - AMPHI

15-SerSerGluArgMetSerGluValGluTyrPheSerHis-27
 83-ArgLysLeuGluGluIleLeuGly-90
 100-ArgGlyAsnLysPheTyrGluSerMetTyrArgLeu-111
 154-LeuAspAspSerIleArg-159
 226-PheValArgValTyrGluLysGly-233
 275-IleCysArgLysPheLysAsnMetProValPro-285
 308-AsnAlaValGlyLysLeuValAsnPhe-316
 326-GluIleValGluSerLeuLysAla-333
 336-GlyPheProLysGlyLeuGlu-342
 348-LeuGluMetLeuArgAspGlyLeuLys-356
 382-AsnSerAspLysPheAspArg-388

Antigenic Index - Jameson-Wolf

1-LeuThrAsnArgGlyGlyAlaLysLeuLysThrAsnSerLysSerSerGluArgMetSerGlu-21
 29-IleSerAspGlyLysGlyLysLeuLeuGluIleProGlnArgArgGlyLysGlnAspGlyVal-49
 62-ThrLeuLeuLysValSerGly-68
 83-ArgLysLeuGluGlu-87
 93-IleThrArgLysCysLysSerArgGlyAsnLysPheTyrGlu-106

 108-MetTyrArgLeuGlySerAspValAspTyrGly-119
 122-HisPheGlyGlyGlnArgAsnThrVal-130
 134-LeuLysGlyThrGlyCys-139
 152-GlnPheLeuAspAspSerIleArgThrArgIleThrArg-164
 172-PheAspGlyGluTyrThrProAspGlnAlaLeuLeuAspHisAspAsnGlyPhePheAspAsnSerAsnGln
 ArgProLysSerGluThrIleGly-203

 205-AlaTrpArgAsnGluAspGlySerGlyLys-214
 217-TyrValGlyArgLysLysAsnSerArgPhe-226
 228-ArgValTyrGluLysGlyArgGlnLeuGlyAspLysGluSerLysTrpVal-244
 251-AsnTyrGlyAspIleGluIle-257
 263-IleAsnGlnGlySer-267
 275-IleCysArgLysPheLysAsnMetProValProGluArgPheAspGlnArgLysLysLysLeu-295
 321-GlyPheAspAsnSerGluIleValGluSerLeuLysAlaAspSerGlyPheProLysGlyLeuGluProGlu
 LysTyrAla-347
 350-MetLeuArgAspGlyLeuLys-356
 361-HisGluGlnProAspIleAspLeuGluIleGluLeuAspGlu-374

 380-PheLysAsnSerAspLysPheAspArgGluLysArgLeuPheSerProAspTyrAspValGluLysGluArg
 LysTyrGlnGluTyrLeu-409
 417-ValAspTyrAspTyrPhe-422

Hydrophilic Regions - Hopp-Woods

1-LeuThrAsnArgGlyGlyAlaLysLeuLysThrAsnSerLysSerSerGluArgMetSerGlu-21

 30-SerAspGlyLysGlyLysLeuLeuGluIleProGlnArgArgGlyLysGlnAspGlyVal-49
 83-ArgLysLeuGluGlu-87
 93-IleThrArgLysCysLysSerArgGlyAsnLysPheTyr-105
 111-LeuGlySerAspAspValAspTyrGly-119
 134-LeuLysGlyThrGly-138
 152-GlnPheLeuAspAspSerIleArgThrArgIleThrArg-164
 181-AlaLeuLeuAspHisAspAsnGlyPhe-189
 193-SerAsnGlnArgProLysSerGluThrIle-202
 206-TrpArgAsnGluAspGlySerGly-213
 219-GlyArgLysLysAsnSerArgPhe-226
 228-ArgValTyrGluLysGlyArgGlnLeuGlyAspLysGluSerLysTrpVal-244
 277-ArgLysPheLysAsn-281

 283-ProValProGluArgPheAspGlnArgLysLysLysLeu-295
 321-GlyPheAspAsnSerGluIleValGluSerLeuLysAlaAspSerGlyPhe-337

 339-LysGlyLeuGluProGluLysTyrAla-347
 350-MetLeuArgAspGlyLeuLys-356
 362-GluGlnProAspIleAspLeuGluIleGluLeuAspGlu-374

 381-LysAsnSerAspLysPheAspArgGluLysArgLeuPhe-393

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396-AspTyrAspValGluLysGluArgLysTyrGlnGluTyrLeu-409

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AMPHI Regions - AMPHI

12-GluArgLeuIleAlaArgLeuAlaArgGluProAspSerAlaGluAspValLeuAsnLeuLeuArgGlnAla-35

44-AspThrLeuLeuArgLeuGluLysValLeuAspPhe-55

77-AspSerIleGluArgIleThrAlaTyr-85

112-AspLeuLeuLysTyrMet-117

143-AlaLeuLeuLysGluPheArgGluGln-151

171-PheGluAspIleIleGluGlnIleValGlyGluIleGluAsp-184

194-AsnIleHisAlaVal-198

208-AlaThrGluIleGluAspIleAsnThrPhe-217

235-IleGlnGluLeuGly-239

Antigenic Index - Jameson-Wolf

1-MetAspGlyAlaGlnProLysThrAsnPhe-10

18-LeuAlaArgGluProAspSerAlaGluAspVal-28

34-GlnAlaHisGluGlnGluValPheAspAlaAspThr-45

47-LeuArgLeuGluLysValLeuAsp-54

56-SerAspLeuGluValArgAspAlaMetIleThrArgSerArgMetAsnValLeuLysGluAsnAspSerIleGluArg-81

96-ValIleGlyGluAspLysAspGluVal-104

118-PheAsnProGluGlnPheHis-124

136-ProGluGlyLysSer-140

146-LysGluPheArgGluGlnArgAsnHis-154

159-IleAspGluTyrGlyGlyThrSerGly-167

178-IleValGlyGluIleGluAspGluPheAspGluAspAspSerAlaAspAsn-194

199-SerSerGluArgTrpArg-204

209-ThrGluIleGluAspIleAsn-215

218-PheGlyThrGluTyrSerSerGluGluAlaAspThr-229

239-GlyHisLeuProValArgGlyGluLysValLeu-249

258-AlaArgAlaAspAsnArgArgLeuHis-266

Hydrophilic Regions - Hopp-Woods

1-MetAspGlyAlaGlnProLys-7

18-LeuAlaArgGluProAspSerAlaGluAspVal-28

34-GlnAlaHisGluGlnGluValPheAsp-42

47-LeuArgLeuGluLysValLeuAsp-54

56-SerAspLeuGluValArgAspAlaMetIleThrArgSerArgMetAsnValLeuLysGluAsnAspSerIleGluArg-81

96-ValIleGlyGluAspLysAspGluVal-104

136-ProGluGlyLysSer-140

146-LysGluPheArgGluGlnArgAsn-153

178-IleValGlyGluIleGluAspGluPheAspGluAspAspSerAlaAspAsn-194

199-SerSerGluArgTrpArg-204

209-ThrGluIleGluAsp-213

222-TyrSerSerGluGluAlaAspThr-229

243-ValArgGlyGluLysValLeu-249

258-AlaArgAlaAspAsnArgArgLeuHis-266

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AMPHI Regions - AMPHI

33-AlaAsnProAspLysValTyrArgValAlaSer-43

48-AlaProPheGluSerLeuAsp-54

68-AsnAlaMetAlaLys-72

134-LysValSerSerSerGluAspLeuLysAsnMetAsnLysValGlyValVal-150

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169-LysIleAlaArgPheGlu-174
 183-LeuGluAsnGlyGlyLeuAspSerValVal-192
 199-AlaAsnTyrValLysAsnAsnPro-206
 209-GlyMetAspPheValThrLeuPro-216
 235-ValLysMetLeuAsnAspAlaLeuGluLysValArgGluSerGlyGluTyr-251

Antigenic Index - Jameson-Wolf

21-CysGlyGlyGlnGlyLysAspThrAlaAla-30
 33-AlaAsnProAspLysValTyrArg-40
 51-GluSerLeuAspSerLysGlyAsnValGluGlyPheAsp-63
 78-IleGluPheLysHisGlnProTrpAspSer-87
 92-LeuAsnAsnGlyAspAlaAspVal-99
 106-IleThrAspAspArgLysGlnSerMetAspPheSerAspProTyrPhe-121
 129-ValProLysGlyLysLysValSerSerSerGluAspLeuLysAsnMetAsnLys-146
 162-LeuLeuGlyAsnAsnAsnProLysIleAlaArg-172
 181-LysGluLeuGluAsnGlyGlyLeuAspSerValValSerAspSerAla-196
 203-LysAsnAsnProAlaLysGlyMetAspPhe-212
 216-ProAspPheThrThr-220
 227-ValArgLysGlyAspGluAlaThrVal-235
 237-MetLeuAsnAspAlaLeuGluLysValArgGluSerGlyGluTyrAspLysIleTyr-255
 259-PheAlaLysGluAspGlyGlnAlaAlaLys-268

Hydrophilic Regions - Hopp-Woods

23-GlyGlnGlyLysAspThrAlaAla-30
 33-AlaAsnProAspLysValTyrArg-40
 51-GluSerLeuAspSerLysGlyAsnValGluGlyPheAsp-63
 93-AsnAsnGlyAspAlaAspVal-99
 106-IleThrAspAspArgLysGlnSerMetAspPheSer-117
 130-ProLysGlyLysLysValSerSerSerGluAspLeuLysAsnMetAsn-145
 166-AspAsnProLysIleAlaArg-172
 181-LysGluLeuGluAsnGlyGlyLeu-188
 205-AsnProAlaLysGlyMetAsp-211
 227-ValArgLysGlyAspGluAlaThrVal-235
 237-MetLeuAsnAspAlaLeuGluLysValArgGluSerGlyGluTyrAspLysIleTyr-255
 259-PheAlaLysGluAspGlyGlnAlaAlaLys-268

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AMPHI Regions - AMPHI

12-ValArgGlnLysMetValAsnGlyValAsnIleLeuAlaAsnAlaVal-27
 71-AlaGlnMetValLysGluValAlaSerLysThr-81
 100-ValAlaGluGlyMetLysTyr-106
 115-AspLeuLysArgGlyIleAspLysAlaValAlaAlaLeuValAspGluLeuLysAsnIleAlaLysProCys
 AspThrSerLysGluIleAlaGlnValGlySer-149
 160-AlaIleIleAlaGluAlaMetGluLysValGly-170
 185-AsnGluLeuAspValValGluGlyMet-193
 209-GluLysGlnIleAlaAla-214
 227-IleSerAsnIleArgAspLeuLeuProValLeuGluGlnValAlaLysAla-243
 265-AsnAsnIleArgGlyIleLeuLysThrValAla-275
 313-ThrLeuAspAspLeuGlyGlnAlaLysArgIle-323
 331-ThrIleIleAspGlyPheGlyAspAlaAla-340
 367-GluArgValAlaLysLeuAlaGlyGlyVal-376
 426-LeuGluAsnLeuHisThr-431
 444-LeuArgAlaValGluSerProLeuArgGlnIleValAlaAsnAla-458
 484-GluTyrGlyAspMetIleGluMet-491
 500-ThrArgSerAlaLeu-504

Antigenic Index - Jameson-Wolf

1-MetAlaAlaLysAspValGlnPhe-8
 10-AsnGluValArgGlnLysMetValAsn-18
 30-ThrLeuGlyProLysGlyArgAsnValValVal-40
 43-AlaPheGlyGlyProHisIleThrLysAspGlyValThrValAlaLysGluIleGluLeuLysAspLysPheGluAsnMetGly-70
 73-MetValLysGluValAlaSerLysThrAsnAspValAlaGlyAspGlyThrThr-90
 112-AsnProThrAspLeuLysArgGlyIleAspLysAlaVal-124
 129-AspGluLeuLysAsnIleAlaLysProCysAspThrSerLysGluIleAla-145
 150-IleSerAlaAsnSerAspGluGlnVal-158
 164-GluAlaMetGluLysValGlyLysGluGlyValIleThrValGluAspGlyLysSerLeuGluAsnGluLeuAspVal-189
 193-MetGlnPheAspArgGlyTyr-199
 207-AspAlaGluLysGlnIleAla-213
 223-PheAspLysLysIleSerAsnIleArgAsp-232
 239-GlnValAlaLysAlaSerArg-245
 252-GluAspValGluGlyGluAla-258
 266-AsnIleArgGlyIleLeu-271
 278-AlaProGlyPheGlyAspArgArgLysAlaMetLeu-289
 303-GluGluValGlyLeuSerLeuGluLysAlaThrLeuAspAspLeuGlyGlnAlaLysArgIleGluIleGlyLysGluAsnThrThr-331
 334-AspGlyPheGlyAspAlaAlaGlnIleGluAlaArgValAlaGluIleArgGlnGlnIleGluThrAlaThrSerAspTyrAspLysGluLysLeuGlnGluArgValAlaLysLeuAlaGly-374
 385-ThrGluValGluMetLysGluLysLysAspArgValGluAspAlaLeuHis-401
 405-AlaAlaValGluGluGlyVal-411
 421-ArgAlaArgAlaAlaLeu-426
 430-HisThrGlyAsnAlaAspGlnAspAlaGlyVal-440
 446-AlaValGluSerProLeuArg-452
 455-ValAlaAsnAlaGlyGlyGluProSerVal-464
 469-ValLeuGluGlyLysGlyAsnTyrGlyTyr-478
 480-AlaGlySerGlyGluTyrGlyAspMetIleGlu-490
 495-AspProAlaLysValThrArgSerAlaLeu-504
 523-GluIleProGluAspLysProAlaValProAspMetGlyGly-536

Hydrophilic Regions - Hopp-Woods

1-MetAlaAlaLysAspValGlnPhe-8
 10-AsnGluValArgGlnLysMet-16
 33-ProLysGlyArgAsnValValVal-40
 48-HisIleThrLysAspGlyValThrValAlaLysGluIleGluLeuLysAspLysPheGluAsn-68
 73-MetValLysGluValAlaSerLysThrAsnAspValAlaGlyAspGlyThrThr-90
 114-ThrAspLeuLysArgGlyIleAspLysAlaVal-124
 129-AspGluLeuLysAsnIleAlaLysProCysAspThrSerLysGluIleAla-145
 152-AlaAsnSerAspGluGlnVal-158
 164-GluAlaMetGluLysValGlyLysGluGlyValIleThrValGluAspGlyLysSerLeuGluAsnGluLeuAspVal-189
 207-AspAlaGluLysGlnIleAla-213
 223-PheAspLysLysIleSerAsnIleArgAsp-232
 239-GlnValAlaLysAlaSerArg-245
 252-GluAspValGluGlyGluAla-258
 280-GlyPheGlyAspArgArgLysAlaMetLeu-289
 303-GluGluValGlyLeuSerLeuGluLysAlaThrLeuAspAspLeuGlyGlnAlaLysArgIleGluIleGlyLysGluAsnThrThr-331
 340-AlaGlnIleGluAlaArgValAlaGluIleArgGlnGlnIleGluThrAlaThrSerAspTyrAspLysGluLysLeuGlnGluArgValAlaLys-371
 385-ThrGluValGluMetLysGluLysLysAspArgValGluAspAlaLeuHis-401

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405-AlaAlaValGluGluGlyVal-411
 421-ArgAlaArgAlaAlaLeu-426
 433-AsnAlaAspGlnAspAla-438
 446-AlaValGluSerProLeu-451
 458-AlaGlyGlyGluPro-462
 469-ValLeuGluGlyLysGly-474
 481-GlySerGlyGlyTyrGlyAsp-487
 495-AspProAlaLysValThrArg-501
 523-GluIleProGluAspLysProAlaVal-531
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AMPHI Regions - AMPHI
 6-GlnTyrLeuAlaLeuAla-11
 18-LeuAlaGlyCysAspLysAlaGly-25
 36-SerPheValGluArgIleGluHis-43
 55-ProAspPheAlaGlnLeuValGln-62
 99-PheTyrGluPhePheLysArgLeuValProAsnMetProGluIleProGln-115
 145-ThrGlyMetGlySerIle-150
 162-AlaLysLeuIleGlySerAspVal-169
 189-IleGlyAsnProLysAspLeuLysProGly-198
 200-TrpValAlaAlaIleGly-205
 287-AlaGluGlnLeuLysAsnThrGlyLysVal-296
 393-AlaAlaGluHisIleGlyAlaSer-400
 471-ArgLysAlaMetAspLysAla-477

Antigenic Index - Jameson-Wolf

1-ValPheLysLysTyr-5
 20-GlyCysAspLysAlaGly-25
 29-GlyAlaAspLysLysGluAlaSerPheValGluArgIleGluHisThrLysAspAspGlySerVal-50
 61-ValGlnSerGluGlyProAla-67
 75-ProAlaProArgThrGlnAsnGlySerGlyAsnAlaGluAsnAspSerAspProIleAlaAspAsnAspProPhe-99
 104-LysArgLeuValProAsnMetProGluIleProGlnGluGluAlaAspAspGlyGlyLeu-123
 130-IleIleSerLysAspGlyTyr-136
 154-LeuAsnAspLysArgGluTyrThr-161
 165-IleGlySerAspValGlnSerAspValAla-174
 179-AspAlaThrGluGluLeuPro-185
 189-IleGlyAsnProLysAspLeuLysProGlyGlu-199
 208-PheGlyPheAspAsnSerVal-214
 219-ValSerAlaLysGlyArgSerLeuProAsnGluSerTyr-231
 242-AsnProGlyAsnSerGlyGlyPro-249
 265-TyrSerArgSerGlyGly-270
 288-GluGlnLeuLysAsnThrGlyLysValGlnArgGlyGlnLeu-301
 316-PheGlyLeuAspLysAlaGlyGly-323
 330-LeuProGlySerProAlaGluArgAlaGlyLeuGlnAlaGlyAsp-344
 349-LeuAspGlyGlyGluIleArgSerSerGlyAspLeu-360
 368-ThrProGlyLysGluValSer-374
 378-TrpArgLysGlyGluGluIleThrIle-386
 397-IleGlyAlaSerSerLysThrAspGluAlaProTyrThrGluGlnGlnSerGlyThrPhe-416
 427-ThrHisThrAspSerSerGlyGly-434
 440-ArgValSerAspAlaAlaGluArgAlaGlyLeuArgArgGlyAspGluIleLeu-457
 463-ProValAsnAspGluAlaGlyPheArgLysAlaMetAspLysAlaGlyLysAsnVal-481
 486-MetArgArgGlyAsnThr-491

Hydrophilic Regions - Hopp-Woods

20-GlyCysAspLysAlaGly-25

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29-GlyAlaAspLysLysGluAlaSerPheValGluArgIleGluHisThrLysAspAspGlySer-49
 75-ProAlaProArgThrGlnAsnGlySerGlyAsnAlaGluAsnAspSerAspProIleAlaAspAsnAspPro-
 98
 111-ProGluIleProGlnGluGluAlaAspAspGlyGly-122
 131-IleSerLysAspGly-135
 154-LeuAsnAspLysArgGluTyrThr-161
 179-AspAlaThrGluGluLeuPro-185
 190-GlyAsnProLysAspLeuLysPro-197
 221-AlaLysGlyArgSerLeuPro-227
 288-GluGlnLeuLysAsnThrGlyLysValGlnArgGlyGln-300
 317-GlyLeuAspLysAlaGly-322
 333-SerProAlaGluArgAlaGlyLeuGln-341
 350-AspGlyGlyGluIleArgSerSerGlyAsp-359
 368-ThrProGlyLysGluValSer-374
 379-ArgLysGlyGluGluIleThrIle-386
 397-IleGlyAlaSerSerLysThrAspGluAlaProTyrThrGluGlnGlnSer-413
 428-HisThrAspSerSerGly-433
 440-ArgValSerAspAlaAlaGluArgAlaGlyLeuArgArgGlyAspGluIleLeu-457
 463-ProValAsnAspGluAlaGlyPheArgLysAlaMetAspLysAlaGlyLys-479
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AMPHI Regions - AMPHI

17-CysSerSerTrpLeu-21
 33-PheAsnThrSerLysProValArgLeuAspAsnIleLeuGlnIle-47
 65-ProHisGluAlaPhe-69
 144-AsnProPheValLeuArgLysTrpArgAlaLeuGlyTyrLeuThrAspPheProArgLeuAsnArg-165
 187-GlyAspGluTyrPheLysVal-193
 202-LeuAspIleLeuAlaThr-207
 211-ValGlyGluValSerHisAspPheAspArgTyrTrpAla-223
 230-AlaThrArgIleIleArgSerGlyAspIleGlyLysGlyLeuGlnAla-245
 290-AspAspProAlaLysGlyLeuAspArg-298
 307-GlyArgLeuGlnAspAlaLeuLysGlnPro-316
 333-GlyThrAspAlaLeuAlaLysLeuValGlnAsp-343
 355-GlnAlaThrAspValAlaAla-361
 443-LysIleAlaGluGlnMetGluArgThrLeu-452
 486-ProGluAlaLysLeuTrpLysArgIleAlaAlaLysIleLeuSerLeuLeuProIleGluGlyLeu-507

Antigenic Index - Jameson-Wolf

1-MetLysThrArgSer-5
 23-ProLeuGluGluArgThrGluSerArgHisPheAsnThrSerLysProValArgLeu-41
 49-HisThrProHisThrAsnGlyLeuSer-57
 77-GluSerAlaGluHisSerLeu-83
 90-TrpArgAsnAspIleSerGlyArgLeu-98
 107-AlaGluArgGlyValArg-112
 115-LeuLeuLeuAspAspAsnAsnThrArgGlyLeuAsp-126
 134-SerHisProAsnIleGluValArgLeu-142
 159-AspPheProArgLeuAsnArgArgMetHisAsnLysSerPheThrAlaAspAsnArgAla-178
 182-GlyGlyArgAsnIleGlyAspGluTyrPheLysValGlyGluAspThrVal-198
 214-ValSerHisAspPheAspArgTyrTrp-222
 225-HisSerAlaHisAsn-229
 232-ArgIleIleArgSerGlyAspIleGlyLysGlyLeu-243
 247-GlyTyrAsnAspGluThrSerArg-254
 259-ArgTyrArgGluThrValGlu-265
 267-SerProLeuTyrGln-271
 282-SerValArgThrArgLeuIleSerAspAspProAlaLysGlyLeuAspArgAspArgArgLysProProIle-
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308-ArgLeuGlnAspAlaLeuLysGlnProGluLysSer-319
 328-ValProThrLysSerGlyThrAspAlaLeu-337
 340-LeuValGlnAspGlyIleAsp-346
 367-ValLysTyrArgLysProLeuLeu-374
 391-AlaThrLysAspLysGlyLeuThrGlySerSer-401
 412-ValAspGlyLysArgIlePhe-418
 422-PheAsnLeuAspProArgSerAlaArgLeuAsnThr-433
 440-GluSerProLysIleAlaGluGlnMetGluArgThrLeuAlaAspThrThrPro-457
 463-ValThrLeuAspArgHisAsnArgLeuGlnTrpHisAspProAlaThrArgLysThrTyrProAsnGluPro
 GluAlaLysLeuTrpLys-492

Hydrophilic Regions - Hopp-Woods

1-MetLysThrArgSer-5
 24-LeuGluGluArgThrGluSerArgHisPheAsnThr-35
 37-LysProValArgLeu-41
 77-GluSerAlaGluHisSerLeu-83
 107-AlaGluArgGlyValArg-112
 115-LeuLeuLeuAspAspAsnAsnThrArgGlyLeuAsp-126
 161-ProArgLeuAsnArgArgMetHisAsn-169
 172-PheThrAlaAspAsnArgAla-178
 189-GluTyrPheLysValGlyGluAspThrVal-198
 214-ValSerHisAspPheAspArg-220
 232-ArgIleIleArgSerGlyAspIleGlyLys-241
 248-TyrAsnAspGluThrSerArg-254
 259-ArgTyrArgGluThrValGlu-265
 282-SerValArgThrArgLeuIleSerAspAspProAlaLysGlyLeuAspArgAspArgLysProProIle
 -305
 308-ArgLeuGlnAspAlaLeuLysGlnProGluLysSer-319
 331-LysSerGlyThrAspAlaLeu-337
 340-LeuValGlnAspGlyIleAsp-346
 367-ValLysTyrArgLysProLeuLeu-374
 391-AlaThrLysAspLysGlyLeuThr-398
 424-LeuAspProArgSerAlaArgLeuAsnThr-433
 440-GluSerProLysIleAlaGluGlnMetGluArgThrLeuAla-453
 464-ThrLeuAspArgHisAsnArg-470
 476-ProAlaThrArgLysThrTyrProAsnGluProGluAlaLysLeuTrpLys-492
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AMPHI Regions - AMPHI

45-SerLysIleGluSerLeuAlaArg-52
 125-GlnMetArgGlyIle-129
 154-AspIleValGluArgAlaGlnSerLysVal-163
 221-AlaLysIleIleGluValLeuGlyAspTyrAlaAsp-232
 248-HisGlnPheSerGluAlaCysAlaLysAlaAlaLysLysIle-261
 288-ThrAlaArgAspPheAspAsp-294
 299-GluLysValGlyArgAsnTyr-305
 310-AlaIleAlaAspValSerHisTyrValArgProAspAspValIleAsp-325
 348-AsnLeuSerAsnGly-352
 396-AsnGlnValTrpLysTrpIleSerAspGlyIleAspHisPro-409
 411-LysAlaGlnIleAspThrLeuTyrLysLeuPheLysIleLeuGlnLys-426
 494-LeuGlyProThrProGluLysLeuAlaThrLeu-504
 526-TyrAlaAlaLeuValGluGlnPheLys-534
 544-ValMetMetLeuArgSerMetGlnGlnAla-553
 569-AlaTyrAlaHisPheThrSerProIleArgArgTyrProAspLeuThrValHisArgAlaIleLysAlaVal
 Leu-593

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619-AspAspAlaSerArgAspValGluAsnTrpLeuLys-630
 646-IleSerGlyMetThrSerPheGlyIlePheValThrLeu-658
 662-HisIleAspGlyLeuValHisIleSerAspLeuGlyGlu-674

Antigenic Index - Jameson-Wolf

1-MetAsnLysAsnIleLys-6

8-LeuAsnLeuArgGluLysAspProPheLeuSerArgGluLysGlnArgTyrGluHisProLeuProSerArgGluTrpIle-34

37-LeuLeuGluArgLysGlyValProSerLysIleGluSerLeuAlaArgGluLeuSerIleThrGluAspGluTyrValPhePheGluArgArgLeuLysAlaMetAlaArgAspGlyGln-76
 79-IleAsnArgArgGlyAlaVal-85

87-AlaAlaAspLysLeuAspLeuValLysCysArgValGluAlaHisLysAspGlyPhe-105

111-LeuThrProAlaLysAspGlyAsp-118

124-ArgGlnMetArgGly-128

138-ArgProAlaGlyMetAspArgArgGlyArgArgGluGlyThrVal-152

155-IleValGluArgAlaGlnSerLysValVal-164

168-TyrMetAspArgGlyValAla-174

176-LeuGluProGluAspLysArgLeuAsnGln-185

189-LeuGluProAspGlyValAlaArgPheLysProGluSerGlyGln-203

210-GluValTyrProGluGlnAsnArgProAlaVal-220

227-LeuGlyAspTyrAlaAspSerGlyMetGluIle-237

239-IleAlaValArgLysHisHisLeu-246

253-AlaCysAlaLysAlaAlaLysLysIleProValHisValArgLysSerAspLeuLysGlyArgValAspLeuArgAsp-278

283-ThrIleAspGlyGluThrAlaArgAspPheAspAsp-294

299-GluLysValGlyArgAsnTyrArg-306

316-HisTyrValArgProAspAspValIleAspAlaAspAlaGlnGluArgSerThrSer-334

337-PheProArgArgVal-341

345-LeuProGluAsnLeuSerAsnGly-352

356-LeuAsnProAspValGluArgLeu-363

374-AlaGlyAsnIleLysGluTyrArgPhe-382

402-IleSerAspGlyIleAspHisProTyrLysAlaGlnIle-414

424-LeuGlnLysLysArgPheGluArgGlyAlaValGluPheGluSerValGlu-440

443-MetIlePheAspAspAsnGlyLysIleGluLys-453

458-ValArgAsnAspAlaHisLysLeuIleGlu-467

482-LeuLysAsnLysHisThrAla-488

493-HisLeuGlyProThrProGluLysLeuAlaThrLeuArgGluGlnLeu-508

516-GlyGlyGlyAspAsnProSerProLysAspTyr-526

532-GlnPheLysGlyArgProAspAlaGluLeu-541

556-GluProHisCysAspGlyHis-562

575-SerProIleArgArgTyrProAspLeuThrVal-585

597-ThrTyrThrProLysLysSerTrp-604

613-PheCysGluArgArgAlaAspAspAlaSerArgAspValGluAsn-627

633-TyrMetArgAspLysValGlyGluValPheGluGlyLysIleSerGly-648

670-SerAspLeuGlyGluAspTyrPheAsnPheArgPro-681

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683-IleMetAlaIleGluGlyGluArgSerGlyIleArgPheAsnMetGlyAspArgValAlaValArgValAla
ArgAlaAspLeuAspAspGlyLysIle-715
722-GlyGlySerGlyArgGlyArgLysValLysSerSerAlaSerAlaLysProAlaGlyThrAlaGlyLysGly
LysProLysThrAlaAlaGluLysLysThrAlaArgGlyGlyLysValArgGlyArgGlyAlaSerAlaAlaAlaG
luSerArgLysLysAlaLysLysProValProIleLysValLysLysArgLysGlyLysSer-791

Hydrophilic Regions - Hopp-Woods

1-MetAsnLysAsnIleLys-6

8-LeuAsnLeuArgGluLysAspProPheLeuSerArgGluLysGlnArgTyrGluHis-26
37-LeuLeuGluArgLysGlyValProSerLysIleGluSerLeuAlaArgGluLeuSerIleThrGluAspGluT
yrValPhePheGluArgArgLeuLysAlaMetAlaArgAspGlyGln-76
79-IleAsnArgArgGlyAla-84
87-AlaAlaAspLysLeuAspLeuValLysCysArgValGluAlaHisLysAspGlyPhe-105
113-ProAlaLysAspGlyAsp-118
140-AlaGlyMetAspArgArgGlyArgGluGlyThrVal-152
155-IleValGluArgAlaGlnSerLysValVal-164
176-LeuGluProGluAspLysArgLeuAsn-184
189-LeuGluProAspGlyValAlaArgPheLysProGluSerGly-202
210-GluValTyrProGluGlnAsnArgProAlaVal-220
230-TyrAlaAspSerGlyMetGluIle-237

239-IleAlaValArgLysHisHis-245
253-AlaCysAlaLysAlaAlaLysLysIleProValHisValArgLysSerAspLeuLysGlyArgValAspLeu
ArgAsp-278

284-IleAspGlyGluThrAlaArgAspPheAspAsp-294

299-GluLysValGlyArgAsnTyr-305
318-ValArgProAspAspValIleAspAlaAspAlaGlnGluArgSerThr-333
358-ProAspValGluArg-362
376-AsnIleLysGluTyrArg-381
405-GlyIleAspHisProTyr-410

424-MetGlnLysLysArgPheGluArgGlyAlaValGluPheGluSerValGlu-440
443-MetIlePheAspAspAsnGlyLysIleGluLys-453
458-ValArgAsnAspAlaHisLysLeuIleGlu-467
496-ProThrProGluLysLeuAlaThrLeuArgGluGlnLeu-508
517-GlyGlyAspAsnProSerProLysAspTyr-526
532-GlnPheLysGlyArgProAspAlaGluLeu-541
576-ProIleArgArgTyrProAsp-582

598-TyrThrProLysLysSerTrp-604
613-PheCysGluArgArgAlaAspAspAlaSerArgAspValGluAsn-627
633-TyrMetArgAspLysValGlyGluValPheGluGlyLysIle-646

683-IleMetAlaIleGluGlyGluArgSerGlyIle-693
696-AsnMetGlyAspArgValAlaValArgValAlaArgAlaAspLeuAspAspGlyLysIle-715
723-GlySerGlyArgGlyArgLysValLysSerSerAlaSerAlaLysProAlaGlyThrAlaGlyLysGlyLys
ProLysThrAlaAlaGluLysLysThrAlaArgGlyGlyLysValArgGlyArgGlyAlaSerAlaAlaAlaGluS
erArgLysLysAlaLysLysProValProIleLysValLysLysArgLysGlyLysSer-791
989

AMPHI Regions - AMPHI

58-AlaGlyLeuThrLysLeu-63
85-SerAlaThrAspPhe-89

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98-LysSerGlyLysIleThr-103
 109-ProHisIleTyrGlyAla-114
 183-GluLeuArgLysTyrAlaAsp-189
 205-LysProAsnGlyValAlaGluAla-212
 273-AlaMetTrpSerThr-277
 301-SerValHisGlyMetTyrLysValSer-309
 320-TrpThrArgHisSerArg-325
 364-SerTyrGlnIleSerGluProLeu-371
 450-PheLysAsnHisAlaAsp-455

Antigenic Index - Jameson-Wolf

46-GluAlaAlaAspAlaSer-51
 57-ProAlaGlyLeuThrLysLeuAspSerSerGlnIle-68
 81-TyrGluAlaAspSerAlaThrAspPheThr-90
 95-GlnGlySerLysSerGlyLysIleThrLysThrThr-106
 116-LysValAsnAspAsnLeuThr-122
 132-GlySerAlaThrGluTyrGluLysAspSerValLeu-143
 146-AsnIleAsnLysLeuGly-151
 164-LysLeuAsnAspArgHisSerPheGly-172
 180-ThrSerAlaGluLeuArgLysTyrAla-188
 191-GlyIleLysSerLysAlaGluIleLeuThrAlaLysProProLysProAsnGlyValAlaGluAlaAlaLys
 IleGlnAlaAspGlyHisAlaAspValLysGlySerAspTrpGly-229
 239-AspIleAsnAspArgAlaArgValGlyValAsnTyrArgSerLysValSerHisThrLeuLysGlyAspAla
 GluTrpAlaAla-266
 285-ThrAlaAsnGluLysAlaArgValLysIleValThrProGluSer-299
 306-TyrLysValSerAspLysAlaAspLeu-314
 319-ThrTrpThrArgHisSerArgPheAspLysAlaGluLeuValPheGluLysGluLysThrValValLysGly
 LysSerAspArgThrThrIle-349
 351-ProAsnTrpArgAsnThrTyrLys-358
 363-GlySerTyrGlnIleSerGlu-369
 377-IleAlaPheAspLysSerProValArgAsnAlaAspTyrArgMetAsnSerLeuProAspGlyAsn-398
 409-HisIleGlyLysAsnHisVal-415
 426-AsnAspThrSerTyrArgThrAlaLysAlaSerGlyAsnAspValAspSerLysGlyAlaSerSerAlaArg
 PheLysAsnHisAla-454

Hydrophilic Regions - Hopp-Woods

61-ThrLysLeuAspSerSerGln-67
 81-TyrGluAlaAspSerAlaThr-87
 95-GlnGlySerLysSerGlyLysIleThrLys-104
 135-ThrGluTyrGluLysAspSerValLeu-143
 164-LysLeuAsnAspArgHisSer-170
 180-ThrSerAlaGluLeuArgLysTyrAla-188
 191-GlyIleLysSerLysAlaGluIleLeuThr-200
 202-LysProProLysProAsnGlyValAlaGluAlaAlaLysIleGlnAla-217
 219-GlyHisAlaAspValLysGlySerAsp-227
 240-IleAsnAspArgAlaArgVal-246
 250-TyrArgSerLysVal-254
 258-LeuLysGlyAspAlaGluTrpAlaAla-266
 285-ThrAlaAsnGluLysAlaArgValLysIleValThr-296
 307-LysValSerAspLysAlaAspLeu-314
 324-SerArgPheAspLysAlaGluLeuValPheGluLysGluLysThrValValLysGlyLysSerAspArgThr
 ThrIle-349
 377-IleAlaPheAspLysSerProValArgAsnAlaAspTyrArgMet-391
 393-SerLeuProAspGlyAsn-398

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428-ThrSerTyrArgThrAlaLysAlaSerGlyAsnAspValAspSerLysGlyAlaSerSerAlaArgPheLys
AsnHisAla-454

990

AMPHI Regions - AMPHI

89-LysSerGlnLeuGlnAspLeuTyrLys-97
128-ThrMetProAspLeuIleAsnLysLeuVal-137
151-ThrSerLeuAsnAsnIlePhe-157
191-ArgArgHisSerAspIleHisThrLeuGluThrSerAsp-203
260-ProGluAsnLeuLysThrLeuAspGly-268
293-TyrGluLeuLeuLysGlnCys-300
372-AlaAspGlyTrpArgLysGlyVal-379
423-GlyTyrGlyGlyGlyValTyrAlaAlaTrp-432
442-AlaTyrLeuAspGlyTrpLeuGlnTyr-450
472-ThrAlaSerValGluGlyGlyTyrAsnAlaLeu-482
550-GlnProPheAlaAlaPheAsnValLeuHisArg-560

Antigenic Index - Jameson-Wolf

6-LeuGlySerAsnThrArgSerThrLysIleGlyAspAspAlaAspPheSerPheSerAspLysProLysProGlyThr-31
35-PheSerSerGlyLysThrAspGlnAsnSerSerGluTyrGlyTyrAspGluIleAsnIleGlnGlyLysAsnTyrAsnSerGlyIle-63
75-TyrIleThrGluLysTyrGlyAlaAspLeuLysGlnAlaVal-88
90-SerGlnLeuGlnAspLeuTyrLysThrArgProGluAlaTrpAlaGluAsnLysLysArgThrGluGluAlaTyr-114
120-ThrLysPheSerThrLeuLysGlnThrMetPro-130
145-HisSerAsnThrSerGlnThrSer-152
157-PheAsnLysLysLeuHisValLysIleGluAsnLysSerHisVal-171
179-ThrLysMetThrLeuLysAspSerLeuTrpGluProArgArgHisSerAspIleHisThrLeuGluThrSerAspAsnAlaArgIleArgLeuAsnThrLysAspGluLysLeuThrValHisLysAspTyrAlaGlyGlyAlaAsp-227
232-TyrAspValArgGluSerAspGluProAlaLeuThrPheGluAspLysValSerGlyGlnSerGlyValValLeuGluArgArgProGluAsnLeuLysThrLeuAspGlyArgLysLeuIleAla-273
275-LysThrAlaAspSerGlySerPheAlaPheLysGlnAsnTyrArgGlnGlyLeu-292
298-LysGlnCysGluGlyGlyPhe-304
312-AlaIleProGluAlaGlu-317
335-ArgAlaAlaAspArgGlyAspAspValTyrAlaAlaAspProSerArgGlnLysLeu-353
358-IleGlyGlyArgSerHisGlnAsnIleArgGlyGlyAlaAlaAlaAspGlyTrpArgLysGlyVal-379
385-ValPheValArgGlnAsnGluGlySerArgLeuAla-396
400-MetGlyGlyArgAlaGlyGln-406
408-AlaSerValAsnGlyLysGlyGlyAlaAlaGlySerAspLeu-421
435-LeuArgAspLysGlnThrGlyAlaTyr-443
452-ArgPheLysHisArgIleAsnAspGluAsnArgAlaGluArgTyrLysThrLysGlyTrpThr-472
475-ValGluGlyGlyTyr-479
487-IleValGlyLysGlyAsnAsnValArg-495
510-AsnGlyGlyPheThrAspSerGluGlyThrAla-520
525-GlySerGlyGlnTrpGlnSerArgAlaGlyIleArgAlaLysThrArgPheAlaLeuArgAsnGlyValAsn-548
559-HisArgSerLysSerPheGlyValGluMetAspGlyGluLysGlnThrLeuAla-576
579-ThrAlaLeuGluGlyArgPheGlyIle-587
589-AlaGlyTrpLysGlyHisMet-595
600-GlyTyrGlyLysArgThrAspGlyAspLysGluAlaAlaLeu-613

Hydrophilic Regions - Hopp-Woods

8-SerAsnThrArgSerThrLysIleGlyAspAspAlaAspPheSerPheSerAspLysProLysProGlyThr-3

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38-GlyLysThrAspGlnAsnSerSer-45
 79-LysTyrGlyAlaAspLeuLysGlnAlaVal-88
 96-TyrLysThrArgProGluAlaTrpAlaGluAsnLysLysArgThrGluGluAlaTyr-114
 161-LeuHisValLysIleGluAsnLysSerHisVal-171
 179-ThrLysMetThrLeuLys-184
 186-SerLeuTrpGluProArgArgHisSerAsp-195
 200-GluThrSerAspAsnAlaArgIleArgLeuAsnThrLysAspGluLysLeuThrVal-218
 220-LysAspTyrAlaGly-224
 233-AspValArgGluSerAspGluProAlaLeuThrPheGluAspLysValSerGly-250
 255-ValLeuGluArgArgProGluAsnLeuLysThrLeuAspGlyArgLysLeuIleAla-273
 275-LysThrAlaAspSerGly-280
 312-AlaIleProGluAlaGlu-317
 335-ArgAlaAlaAspArgGlyAspAspValTyrAla-345
 347-AspProSerArgGln-351
 361-ArgSerHisGlnAsnIleArgGly-368
 373-AspGlyTrpArgLys-377
 385-ValPheValArgGlnAsnGluGlySerArg-394
 410-ValAsnGlyLysGlyGlyAlaAlaGly-418
 435-LeuArgAspLysGlnThr-440
 452-ArgPheLysHisArgIleAsnAspGluAsnArgAlaGluArgTyrLysThr-468
 513-PheThrAspSerGluGlyThr-519
 533-AlaGlyIleArgAlaLysThrArgPheAlaLeu-543
 559-HisArgSerLysSerPheGlyValGluMetAspGlyGluLysGlnThrLeuAla-576
 579-ThrAlaLeuGluGly-583
 600-GlyTyrGlyLysArgThrAspGlyAspLysGluAlaAlaLeu-613
992

AMPHI Regions - AMPHI

6-ArgHisLeuLysAsnMetGlnIleLysLysIleMetLysTrp-19
 24-LeuSerLeuLeuGlyAlaLeuGlyTyr-32
 45-AlaValLeuAspValLeuGlyAlaAla-53
 72-HisArgTyrThrGlyThrValSerLysValTyr-82
 158-GlnValGlnAspGly-162
 179-AspPheAlaAspTyr-183

Antigenic Index - Jameson-Wolf

1-MetPheArgArgHisArgHisLeuLys-9
 34-GlyTyrGlySerGluAlaValArg-41
 52-AlaAlaGlyAspAlaGlySerAspAlaProAlaArgArgAlaSerAlaLysSerGlyHisArgTyrThr-75
 79-SerLysValTyrAspGlyAspThr-86
 90-IleAspGlyAspGlyAlaLysHisLysIle-99
 105-AspAlaProGluMetLysGlnAlaTyrGlyThrArgSerArgAspAsnLeuArgAlaAlaAlaGluGlyArgLysValSer-131
 134-ValPheAspThrAspArgTyrGlnArgGluValAla-145
 148-SerValGlyLysThrAspLeuAsn-155
 168-LysSerTyrAlaLysGluGlnGlnAspLysAlaAspPhe-180
 187-GlnIleGlnAlaGluArgGluArgLysGlyLeuTrpLysAlaLysAsnProGlnAlaPro-206
 208-AlaTyrArgArgAlaGlyArgSerGlyGlyGlyAsnLysAspTrpMetAsp-224

Hydrophilic Regions - Hopp-Woods

1-MetPheArgArgHisArgHisLeuLys-9
 54-GlyAspAlaGlySerAspAlaProAlaArgArgArgAlaSerAlaLysSerGlyHisArg-73
 90-IleAspGlyAspGlyAlaLysHisLysIle-99
 105-AspAlaProGluMetLysGln-111
 113-TyrGlyThrArgSerArgAspAsnLeuArgAlaAlaAlaGluGlyArgLysValSer-131

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134-ValPheAspThrAspArgTyrGlnArgGluValAla-145
 148-SerValGlyLysThrAspLeu-154
 169-SerTyrAlaLysGluGlnGlnAspLysAlaAspPhe-180
 187-GlnIleGlnAlaGluArgGluArgLysGlyLeuTrpLysAlaLysAsnPro-203
 211-ArgAlaGlyArgSerGlyGlyGlyAsnLysAspTrpMet-223
 993

AMPHI Regions - AMPHI

6-GlySerPheGlnGlyProLeuAspLeuLeuLeu-16
 35-ThrGluGlnTyrLeuHisTyrIleAlaGlnIle-45
 105-GlyLeuAspAlaLeuProArgAla-112
 136-IleThrAspLeuThrGlnAlaTrpLeuGly-145
 152-HisThrArgSerHisGluValIle-159
 169-MetThrAlaIleLeuArgArgLeuAsnGlyHisGlyIleCysArgPheHisAspLeuPheAsn-189
 199-ValAsnPheIleAlaLeuLeu-205
 211-GlyLeuValArgIleValGln-217

Antigenic Index - Jameson-Wolf

20-ArgLysGlnAsnIleAsp-25
 70-LeuLeuLeuProArgThrGluThrValGluAspGluGluAlaAspProArgAlaGluLeuValArg-91
 108-AlaLeuProArgAlaGlyArgAspPhe-116
 148-SerArgAlaLysHisThrArgSerHisGluValIleLysGluThrIleSer-164
 172-IleLeuArgArgLeuAsnGlyHisGlyIle-181
 186-AspLeuPheAsnProLysGlnGlyAla-194
 207-LeuAlaLysGluGlyLeu-212
 216-ValGlnGluAspGlyPheGlyGluIleArgIle-226
 228-LeuAsnHisGluGlyAlaHisSerAspGlyIleSerGlyThrArgGlyGlyArgAspValPhe-248

Hydrophilic Regions - Hopp-Woods

20-ArgLysGlnAsnIleAsp-25
 70-LeuLeuLeuProArgThrGluThrValGluAspGluGluAlaAspProArgAlaGluLeuValArg-91
 108-AlaLeuProArgAlaGlyArg-114
 148-SerArgAlaLysHisThrArgSerHisGluValIleLysGluThrIleSer-164
 207-LeuAlaLysGluGlyLeu-212
 216-ValGlnGluAspGlyPheGly-222
 232-GlyAlaHisSerAspGlyIleSerGlyThrArgGlyGlyArgAspValPhe-248
 996

AMPHI Regions - AMPHI

21-LysSerAlaArgThrHisAlaLysIlePro-30
 50-ProGlyGluSerTyrProAlaGlnLeuGlnLysLeuThrGlyTrpAsn-65
 75-ThrSerAlaGlnAlaLeuSerArgLeuProAla-85
 104-LeuArgLysValProLysGlu-110
 115-AsnIleAlaLysIleIleGluThrValGlnLys-125
 140-LeuGlyAlaLeuPheGlyHisLeuSerAsp-149
 167-GlyAlaTrpAlaGlu-171
 186-AsnGlyLysGlyTyrArgLysPheAlaGluAspLeuAsnGlnPheLeuArgLysGlnGlyPhe-206

Antigenic Index - Jameson-Wolf

1-MetAsnArgArgThrPhe-6
 18-CysGlyArgLysSerAlaArgThrHisAlaLysIleProGluGlySerThr-34
 46-TyrGlyAlaAsnProGlyGluSerTyrPro-55
 69-GlyGlyValSerGlyAspThrSerAla-77
 87-LeuAlaArgLysProLys-92
 99-GlyGlyAsnAspPheLeuArgLysValProLysGluGlnThrArgAlaAsnIle-116
 121-GluThrValGlnLysGluAsnIlePro-129
 148-SerAspHisProLeuTyrGluAspLeuSerGluGluTyrGly-161

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173-LeuGlyAspAsnAsnLeuLysSerAspGlnIleHisAlaAsnGlyLysGlyTyrArgLysPheAlaGluAsp
 LeuAsnGlnPheLeuArgLysGlnGlyPheArg-207

Hydrophilic Regions - Hopp-Woods

18-CysGlyArgLysSerAlaArgThrHisAlaLysIleProGlu-31
 49-AsnProGlyGluSerTyr-54
 71-ValSerGlyAspThrSerAla-77
 87-LeuAlaArgLysProLys-92
 102-AspPheLeuArgLysValProLysGluGlnThrArgAlaAsnIle-116
 121-GluThrValGlnLysGluAsnIle-128
 154-GluAspLeuSerGluGluTyrGly-161
 176-AsnAsnLeuLysSerAspGlnIleHisAlaAsn-186
 188-LysGlyTyrArgLysPheAlaGluAspLeuAsnGlnPheLeuArg-202
 997

AMPHI Regions - AMPHI

18-TrpAlaGlyLeuSerAlaAlaVal-25
 70-TyrArgGlyValLeuArgLeuMetLysThrIleGly-81
 107-ProLeuProAlaProLeuHisIle-114
 132-LeuLeuAlaAspMetSerAspLeuGlnLysSerAlaArgLeuGly-146
 164-AlaAlaValMetGlnPheTrpGlnProLeuValTrpGly-176
 189-ValLeuCysAsnValLeuSerAsp-196
 222-AlaLeuAlaAspLeuGlnArg-228
 241-ArgLeuAsnThrLeuPro-246
 275-GluGlyThrProGluHisValGlnThrAla-284
 300-TyrAlaGluProValArgLeuProAlaProLeuThrGlyLeuAlaAspGly-316
 355-LysAlaHisAlaAspLeuLysArgIleLeuProHisLeu-367
 369-GluProGluAlaVal-373

Antigenic Index - Jameson-Wolf

3-AsnThrProHisProArgProLysIle-11
 37-GluAlaGlyArgGlnAlaGlyGlyArgAlaArgThrLeuAlaGlyAsnThrAspGlyPheGly-57
 78-LysThrIleGlySerAspProArgAlaAla-87
 122-ArgArgAlaProThr-126
 132-LeuLeuAlaAspMetSerAspLeuGlnLysSerAlaArgLeuGlyGlnProAspThrThr-151
 156-LeuLysGlnArgAsnValProArg-163
 180-ThrProLeuGluThrAlaSer-186
 197-GlyValLeuThrLysLysSerGlySerAspTyrLeuLeuProLysGlnAspLeu-214
 225-AspLeuGlnArgLeuGlyAlaAspIleArgLeuGluThrArgValCysArg-241
 243-AsnThrLeuProAspGlyLysVal-250
 273-LeuProGluGlyThrProGluHisVal-281
 312-GlyLeuAlaAspGlyThr-317
 323-CysArgGlyArgLeuGlyLeuProGluAsnGluVal-334
 340-ValSerAspArgValGlyAla-346
 351-AlaTrpAlaAspLysAlaHisAlaAspLeuLysArgIleLeu-364
 367-LeuGlyGluProGluAlaValArgValIleThrGluLysArgAlaThrThrAlaAlaAspAlaProProPro
 AspLeu-392
 402-ProAlaGlyAspTyrLeuHisProAspTyrProAla-413

Hydrophilic Regions - Hopp-Woods

5-ProHisProArgProLysIle-11
 37-GluAlaGlyArgGlnAlaGlyGlyArgAlaArgThrLeuAlaGlyAsn-52
 80-IleGlySerAspProArgAlaAla-87
 122-ArgArgAlaProThr-126
 132-LeuLeuAlaAspMetSerAspLeuGlnLysSerAlaArgLeuGlyGlnProAspThrThr-151
 198-ValLeuThrLysLysSerGlySer-205

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208-LeuLeuProLysGlnAspLeu-214
 225-AspLeuGlnArgLeuGlyAlaAspIleArgLeuGluThrArgValCysArg-241
 246-ProAspGlyLysVal-250
 276-GlyThrProGluHisVal-281
 325-GlyArgLeuGlyLeuProGluAsnGluVal-334
 340-ValSerAspArgValGly-345
 351-AlaTrpAlaAspLysAlaHisAlaAspLeuLysArgIleLeu-364
 368-GlyGluProGluAlaValArgValIleThrGluLysArgAlaThrThrAlaAlaAspAlaProProPro-390

999

AMPHI Regions - AMPHI

6-LeuIleSerAlaIleCysValSerIle-14
 30-GluProValGlnSerIleGlnAlaAla-38
 117-GlyGlnAsnLeuValAsnAsnAlaIleAsnGlyLeuHisSerIleGlnAlaValLeuSer-136
 138-ThrThrThrAspLys-142
 151-GlnLeuPheThrAlaLeuThrGluValValLysGluSer-163

Antigenic Index - Jameson-Wolf

1-MetAsnMetLysLysLeuIle-7
 18-AlaCysAsnGlnGlnSerLysThrAlaGlnAlaGluGluProValGln-33
 42-AlaProMetAspIleThrVal-48
 57-GlnAlaPheLysThrGlnAsnValSer-65
 67-LysIleHisAsnLysAsnIleValLysThrAspCysGlyTyr-80
 94-LysLeuAspGluGlnGlnLysIleArgAla-103
 111-LysThrAspGlyGluLysGlyGlnAsnLeu-120
 138-ThrThrThrAspLysLeuGlyGluSerGluAlaGlyLys-150
 158-GluValValLysGluSerAsnGlnThrGly-167
 169-ThrAlaGlnLysAspValProAlaAspGly-178
 185-PheGluLysGluThrAsnThr-191
 195-IleGlyArgLysGlnPro-200

Hydrophilic Regions - Hopp-Woods

1-MetAsnMetLysLysLeuIle-7
 21-GlnGlnSerLysThrAlaGlnAlaGluGluProValGln-33
 72-AsnIleValLysThrAspCysGlyTyr-80
 94-LysLeuAspGluGlnGlnLysIleArgAla-103
 112-ThrAspGlyGluLysGlyGlnAsn-119
 139-ThrThrAspLysLeuGlyGluSerGluAlaGlyLys-150
 158-GluValValLysGluSerAsnGln-165
 169-ThrAlaGlnLysAspValProAla-176
 185-PheGluLysGluThrAsn-190
 195-IleGlyArgLysGlnPro-200

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AMPHI Regions - AMPHI

7-AlaAlaArgArgMet-11
 69-PhePheGlySerAlaCysAsnSerAlaAla-78

Antigenic Index - Jameson-Wolf

3-ProGlnGlyLysAlaAlaArgArgMetSerAlaAsnGluValCys-17
 31-ThrLeuProLysArgAspThrLeuAsnGlySerGlyThr-43
 53-ProArgSerLeuArgSerLysSerThr-61
 68-ArgPhePheGlySerAlaCysAsnSerAlaAlaArgArgSerSerCysProSerProLysIleGly-89
 100-ValProSerGluProIleLeuArgLysSerSerGlyGluLysHisSerVal-116
 118-AlaAspCysProCysAlaSerGlyArgTrpAspLysThrAla-131

Hydrophilic Regions - Hopp-Woods

5-GlyLysAlaAlaArgArgMetSerAla-13
 32-LeuProLysArgAspThrLeuAsn-39
 54-ArgSerLeuArgSerLysSer-60
 76-SerAlaAlaArgArgSerSerCysProSerProLys-87
 104-ProIleLeuArgLysSerSerGlyGluLysHisSerVal-116
 125-GlyArgTrpAspLysThrAla-131

a003

AMPHI Regions - AMPHI

72-AsnGlnValValLeu-76
 82-IleValGluValPheGlnArg-88
 138-ArgIleAsnAspAlaGluIleLeuGlnAspValValAlaGluPheValGlyIleValGlyHisPheAsp
 GlyPheGlyVal-165
 174-PheIleAlaArgIlePheArgVal-181

Antigenic Index - Jameson-Wolf

91-PheAsnAsnGluGlyGln-96
 104-PheGluGlyGlyGlyAspGlyPhe-112
 137-GlyArgIleAsnAspAlaGluGluIleLeu-146
 204-ProGluAlaAlaAlaGlyGluValAspGlyAlaArgValHisAsp-218

Hydrophilic Regions - Hopp-Woods

106-GlyGlyGlyAspAspGlyPhe-112
 137-GlyArgIleAsnAspAlaGluGluIleLeu-146
 205-GluAlaAlaAlaGlyGluValAspGlyAlaArgValHisAsp-218

a005

AMPHI Regions - AMPHI

14-IleGlnSerMetTrpLysGlu-20
 30-LeuGluLeuLeuThrValPheGlyAlaIleAla-40
 60-LeuThrAspPheSerGluAsnTyr-67
 105-ArgLeuLysGluGlyGlyGluLysSerSerGlu-115
 175-GlnLeuArgArgLeuArg-180
 214-AlaIleValGlySerValGlyValValAlaGluValProAsnIleHisArgLeuLeuLysLys-234
 247-PheLysArgThrVal-251
 272-ThrHisGlnLeuPheLysGln-278
 306-LeuAsnLeuIleAspGluIleSerThr-314
 318-LeuLeuLeuLysAlaPhe-323

Antigenic Index - Jameson-Wolf

8-MetProGluGlnGluGluIleGlnSerMetTrp-18
 48-GlnSerLysLysGlnSerGluSerGlySer-57
 62-AspPheSerGluAsnTyrLysLysGlnArgGlnSerPhe-74
 80-SerGlyGluGluAlaLysHisGlnGluLysGluGluLysLysLysGluLysAlaGluAlaLysAlaGluLysLysArgLeuLysGluGlyGlyGluLysSerSerGluThrGlnLysSerArg-120
 136-GluSerLeuArgHisGluIle-142
 149-AlaLysProGluAspGluValLeuLeu-157
 159-LeuGluSerProGlyGlyVal-165
 175-GlnLeuArgArgLeuArgGluArgAsnIle-184
 189-AlaValAspLysValAlaAla-195
 230-ArgLeuLeuLysLysHisAspIleAspVal-239
 245-GlyGluPheLysArgThr-250
 256-GluAsnThrGluLysGlyLysGlnLysPheArgGlnGluLeuGluGluThrHisGln-274
 279-PheValSerGluAsnArgProGlnLeuAspIleGluGluValAlaThr-294
 310-AspGluIleSerThrSerAspAspLeuLeu-319

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323-PheGluAsnLysGlnValIle-329
 332-LysTyrGlnGluLysGlnSerLeu-339
 349-AlaSerValGluLysLeuPhe-355
 359-ValAsnArgArgAlaAspVal-365

Hydrophilic Regions - Hopp-Woods

8-MetProGluGlnGluGluIleGlnSerMetTrp-18
 48-GlnSerLysLysGlnSerGluSerGly-56
 62-AspPheSerGluAsnTyrLysLysGlnArgGlnSerPhe-74
 81-GlyGluGluAlaLysHisGlnGluLysGluGluLysLysGluLysAlaGluAlaLysAlaGluLysLysA
 rgLeuLysGluGlyGlyGluLysSerSerGluThrGlnLysSerArg-120
 136-GluSerLeuArgHisGluIle-142
 149-AlaLysProGluAspGluValLeuLeu-157
 159-LeuGluSerProGly-163
 175-GlnLeuArgArgLeuArgGluAsnIle-184
 189-AlaValAspLysValAlaAla-195
 230-ArgLeuLeuLysLysHisAspIleAspVal-239
 245-GlyGluPheLysArg-249
 256-GluAsnThrGluLysGlyLysGlnLysPheArgGlnGluLeuGluThrHisGln-274
 279-PheValSerGluAsnArgProGlnLeuAspIleGluGluValAlaThr-294
 310-AspGluIleSerThrSerAspAspLeuLeu-319
 323-PheGluAsnLysGlnValIle-329
 332-LysTyrGlnGluLysGlnSerLeu-339
 349-AlaSerValGluLysLeuPhe-355
 359-ValAsnArgArgAlaAspVal-365

a006-1**AMPHI Regions - AMPHI**

40-GlnAlaTrpGlnAlaLeuLeuTyrAlaLeuValValLeu-52
 61-ArgArgIleAlaAspThrArgThrPheThrArgIleTyrThrGlu-75
 103-GluPheValSerPhePheGlu-109
 117-ThrSerValValSerIlePheGlyAlaCysIleMetLeuLeu-130
 179-GlyAspGluArgGlnLeu-184
 186-ArgHisTyrGlyLeuLeuAlaArgLeu-194
 228-GlyTyrSerSerAlaGlyHisValTyrSer-237
 249-LeuAspAspValProArgLeuValGluGlnTyrSerAsnLeuLysAspIle-265

Antigenic Index - Jameson-Wolf

1-SerGlnAsnHisArgLysArgLeu-8
 59-AlaAlaArgArgIleAlaAspThrArgThrPheThr-70
 82-LeuGluGlnArgGlnArgGlnValProHisSer-92
 163-PheArgLeuLysAsnSerLeuGluArgAspAsnHisPheIleArgLysGlyAspGluArgGlnLeuAspArg
 HisTyr-188
 198-IleSerAsnArgGluAlaPhe-204
 227-LysGlyTyrSerSer-231
 249-LeuAspAspValProArgLeuValGluGlnTyrSerAsnLeuLysAspIleGlyGln-267
 269-IleGluTrpSerLysArgAsnIleLysAlaGlyThr-280

Hydrophilic Regions - Hopp-Woods

1-SerGlnAsnHisArgLysArgLeu-8
 59-AlaAlaArgArgIleAlaAspThrArgThrPhe-69
 82-LeuGluGlnArgGlnArgGlnValPro-90
 166-LysAsnSerLeuGluArgAspAsnHisPheIleArgLysGlyAspGluArgGlnLeuAspArg-186
 198-IleSerAsnArgGluAla-203
 249-LeuAspAspValProArgLeuValGlu-257
 260-SerAsnLeuLysAspIleGlyGln-267

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269-IleGluTrpSerLysArgAsnIleLysAlaGlyThr-280

a007-1**AMPHI Regions** - AMPHI

71-HisSerMetValLysGlyIleAsn-78

105-ValAlaThrTyrIleMetAsnAlaPheAspAsnGlyGlyGly-118

Antigenic Index - Jameson-Wolf

1-MetAsnThrThrArgLeu-6

20-SerAlaAlaAspAsnSerIleMetThrLysGlyGlnLysValTyrGluSerAsnCys-38

41-CysHisGlyLysLysGlyGluGlyArgGlyThr-51

55-ProLeuTyrArgSerAspPheIleMetLysLysProGln-67

83-ValAsnGlyLysThrTyrAsnGly-90

98-SerAspAlaAspIle-102

112-AlaPheAspAsnGlyGlyGlySerValThrGluLysAspValLysGlnAlaLysAsnLysLys-132

Hydrophilic Regions - Hopp-Woods

26-IleMetThrLysGlyGlnLysValTyrGlu-35

42-HisGlyLysLysGlyGluGlyArgGly-50

61-PheIleMetLysLysProGln-67

98-SerAspAlaAspIle-102

119-SerValThrGluLysAspValLysGlnAlaLysAsnLysLys-132

a008**AMPHI Regions** - AMPHI

15-LeuGluAsnProAlaGlnGlnValArgAlaAlaLeuAspThrLeuSer-30

54-GlnProAspPheValAsnAlaVal-61

69-AspGlyIleAlaLeuLeuAlaGluLeuAsnArg-79

90-PheArgAsnAlaPro-94

129-ArgProLeuAlaGluIleLeuProAsp-137

144-GlyLysValAlaGluLeuSerLysArgLeuGly-154

Antigenic Index - Jameson-Wolf

1-MetAsnAsnArgHis-5

12-GlySerAsnLeuGluAsnProAlaGlnGlnVal-22

29-LeuSerSerHisProAspIleArgLeuLysGlnAlaSerSer-42

49-ValGlyTyrAspAsnGlnProAspPhe-57

76-GluLeuAsnArgIleGluAlaAspPheGlyArgGluArgSerPheArgAsnAlaProArgThrLeuAspLeuAspIleIleAspPheAspGlyIleSerSerAspAspProArgLeuThrLeuProHisProArgAlaHisGluArgSerPheVal-127

140-LeuGlyLysHisGlyLysValAlaGluLeuSerLysArgLeuGlyAsnGlnGlyIle-158

160-LeuLeuProAspLys-164

Hydrophilic Regions - Hopp-Woods

14-AsnLeuGluAsnProAlaGlnGlnVal-22

33-ProAspIleArgLeuLysGln-39

76-GluLeuAsnArgIleGluAlaAspPheGlyArgGluArgSerPheArgAsnAlaProArgThrLeuAsp-98

105-AspGlyIleSerSerAspAspProArgLeu-114

120-ArgAlaHisGluArgSerPheVal-127

142-LysHisGlyLysValAlaGluLeuSerLysArgLeuGly-154

160-LeuLeuProAspLys-164

a009**Antigenic Index** - Jameson-Wolf

6-ValAlaPheGluArgHisHisHisLysSerLysAlaGluGlnAsnThrHisArgArgAlaAspAlaGluIleAlaGlu-31

37-AsnGlnHisThrGlnAlaArgLysGlnSer-46

57-PheSerAspLysVal-61

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77-AlaAspGlyGlyLysThrTrpGlnLysPro-86

Hydrophilic Regions - Hopp-Woods

6-ValAlaPheGluArgHisHisHisLysSerLysAlaGluGlnAsnThrHisArgArgAlaAspAlaGluIleAlaGlu-31

40-ThrGlnAlaArgLysGlnSer-46

78-AspGlyGlyLysThrTrpGln-84

a010-1**AMPHI Regions** - AMPHI

54-SerAlaSerLeuGly-58

70-TyrAspThrValLysGly-75

115-TyrGlnArgProPheGlyGlyHis-122

125-GluHisGlyLysArgAlaVal-131

146-LeuHisThrLeuTyrGln-151

210-AlaSerSerThrAsn-214

216-TyrMetAsnThrGlyAspGly-222

275-ArgTyrAlaProThrValLys-281

322-IleMetGluLysLeuProGlyIleArg-330

338-GlyIleAspProIleLysAspProIlePro-347

357-GlyGlyIleProThrAsnTyrHis-364

413-AlaAlaGlyAspSerMetIleLysPheIleLysGluGlnSerAspTrp-428

446-LeuAspAsnGlnThrAsp-451

453-GluAsnValAspAlaLeuArgArgGluLeu-462

479-LeuSerLysGlyValArgGluValMetAlaIleAlaGlu-491

505-TrpAsnThrAlaArg-509

514-GluLeuAspAsnLeuIleGluValAlaLys-523

Antigenic Index - Jameson-Wolf

14-GlyGlyGlyGlyAlaGlyLeu-20

26-LeuSerLysSerGlyLeu-31

40-PheProThrArgSerHisThr-46

59-AsnValGlnGluAspArgTrpAsp-66

71-AspThrValLysGlySerAspTrpLeuGlyAspGlnAspAlaIle-85

104-MetProPheAspArgValGluSerGlyLysIleTyrGlnArgProPheGly-120

123-ThrAlaGluHisGlyLysArgAlaValGluArgAlaCysAlaValAlaAspArgThrGly-142

152-GlnAsnValArgAlaAsnThrGln-159

168-AspLeuIleArgAspGluAsnGlyAspVal-177

183-MetGluMetGluThrGlyGlu-189

202-ThrGlyGlyGlyGlyArgIle-208

211-SerSerThrAsnAla-215

218-AsnThrGlyAspGlyLeu-223

231-IleProLeuGluAspMetGlu-237

255-GluGlyValArgGlyGluGlyGlyIle-263

266-AsnAlaAspGlyGluArgPheMetGlu-274

276-TyrAlaProThrValLysAspLeuAlaSerArgAspValValSer-290

297-IleTyrGluGlyArgGlyCysGlyLysAsnLysAspHisVal-310

315-AspHisIleGlyAlaGluLysIleMetGluLysLeuProGlyIleArgGluIleSer-333

338-GlyIleAspProIleLysAspProIle-346

368-ValValProGlnGlyAspGluTyrGluValProVal-379

395-GlyAlaAsnArgLeuGlyThrAsnSerLeu-404

413-AlaAlaGlyAspSerMet-418

421-PheIleLysGluGlnSerAspTrpLysProLeuProAlaAsnAlaGlyGluLeuThrArgGlnArgIleGluArgLeuAspAsnGlnThrAspGlyGluAsnValAspAlaLeuArgArgGluLeuGlnArgSer-465

473-PheArgThrAspGluIleLeuSerLysGlyValArgGlu-485

487-MetAlaIleAlaGluArgValLysArgThrGluIleLysAspLysSerLysVal-504

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508-AlaArgIleGluAlaLeuGluLeu-515
 529-AlaGluAlaArgLysGluSerArgGlyAlaHisAlaSerAspAspHisProGluArgAspAspGluAsnTrp
 Met-553
 558-TyrHisSerAspAlaAsnThrLeuSerTyrLysProValHisThrLysProLeuSer-576
 581-LysProAlaLysArgValTyr-587

Hydrophilic Regions - Hopp-Woods

26-LeuSerLysSerGlyLeu-31
 59-AsnValGlnGluAspArgTrpAsp-66
 71-AspThrValLysGly-75
 77-AspTrpLeuGlyAspGlnAspAlaIle-85
 105-ProPheAspArgValGluSerGlyLysIleTyr-115
 123-ThrAlaGluHisGlyLysArgAlaValGluArgAlaCysAlaValAlaAspArgThrGly-142
 168-AspLeuIleArgAspGluAsnGlyAsp-176
 183-MetGluMetGluThrGlyGlu-189
 231-IleProLeuGluAspMetGlu-237
 255-GluGlyValArgGlyGluGly-261
 267-AlaAspGlyGluArgPheMetGlu-274
 276-TyrAlaProThrValLysAspLeuAlaSerArgAspValValSer-290
 297-IleTyrGluGlyArgGlyCysGlyLysAsnLysAspHisVal-310
 315-AspHisIleGlyAlaGluLysIleMetGluLysLeuProGlyIleArgGluIleSer-333
 340-AspProIleLysAspProIle-346
 371-GlnGlyAspGluTyrGluValProVal-379
 421-PheIleLysGluGlnSerAspTrpLysPro-430
 434-AsnAlaGlyGluLeuThrArgGlnArgIleGluArgLeuAspAsnGlnThrAspGlyGluAsnValAspAla
 LeuArgArgGluLeuGlnArg-464
 473-PheArgThrAspGluIleLeuSerLysGlyValArgGlu-485
 487-MetAlaIleAlaGluArgValLysArgThrGluIleLysAspLysSerLysVal-504
 508-AlaArgIleGluAlaLeuGluLeu-515
 529-AlaGluAlaArgLysGluSerArgGlyAlaHisAlaSerAspAspHisProGluArgAspAspGluAsnTrp
 Met-553
 581-LysProAlaLysArgValTyr-587

a011**AMPHI Regions - AMPHI**

58-IleArgLeuIleAsnAlaAla-64
 83-AlaIleLeuThrLys-87
 116-GluValLeuHisArgTyrLeuProGlnMetLeuSerAlaGly-129
 147-MetAlaXxxMetGlyLysValMetGlyVal-156

Antigenic Index - Jameson-Wolf

1-MetArgThrHisArgLysThrCysSer-9
 17-ThrAlaSerLysProAlaValSerIleArgHisProSerGluAsnIleMet-33
 37-IleArgLeuThrGluAspMetLysThrAlaMetArgAlaLysAspGlnVal-53
 66-LysGlnPheGluValAspGluArgThrGluAlaAspAspAlaLysIle-81
 88-MetValLysGlnArgLysAspSerValLysIle-98
 100-ThrGluAlaGlyArgGlnAspLeuAlaAspLysGluAsnAlaGluIle-115
 127-SerAlaGlyGluIleArgThrAlaVal-135
 157-XxxLysThrArgLeuAlaGlyLysAlaAspMetGlyGluValAsnLysIleLeu-174

Hydrophilic Regions - Hopp-Woods

1-MetArgThrHisArgLysThrCys-8
 37-IleArgLeuThrGluAspMetLysThrAlaMetArgAlaLysAspGlnVal-53
 66-LysGlnPheGluValAspGluArgThrGluAlaAspAspAlaLysIle-81
 88-MetValLysGlnArgLysAspSerValLysIle-98
 100-ThrGluAlaGlyArgGlnAspLeuAlaAspLysGluAsnAlaGluIle-115

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129-GlyGluIleArgThrAlaVal-135
 157-XxxLysThrArgLeuAlaGlyLysAlaAspMetGlyGluValAsnLysIleLeu-174
a012-1

AMPHI Regions - AMPHI

19-LysLeuLeuGluGlnLeuMetArgPheLeuGlnPheLeuSerGluPheLeuPheAlaLeuPheArgIle-41
 48-ArgAlaLeuLysPheAlaArgArg-55
 89-AsnAsnPheIleArgHisThr-95
 160-GlnGlyPheTyrGlyVal-165
 179-GlyPheLeuArgPheGlyArgPheLeuProThrLeuLeuGlnThrLeu-194

Antigenic Index - Jameson-Wolf

42-PheThrHisLysSerAsnArgAlaLeuLysPheAlaArgArgHisHis-57
 72-ArgTyrPheArgTyrAsnThrHisArgThrAspAsnArgLysArgSerGlyAsnAsnPhe-91
 93-ArgHisThrArgHisHis-98
 101-ThrAlaArgArgHisLeuIleAspGlyAspGlyGlnArgAsn-114
 119-GlnThrProLysLeuArgSerArgGln-127
 137-ThrPheGlnSerLysGlnAsnLeu-144
 147-ArgLeuGlyAsnGlnLysHisArgArgAsnLeuMetThrGln-160
 173-IleGlnHisLysLysAlaGly-179

Hydrophilic Regions - Hopp-Woods

45-LysSerAsnArgAlaLeuLysPheAlaArgArgHisHis-57
 77-AsnThrHisArgThrAspAsnArgLysArgSerGly-88
 101-ThrAlaArgArgHisLeuIleAspGlyAspGlyGlnArg-113
 121-ProLysLeuArgSerArgGln-127
 149-GlyAsnGlnLysHisArgArgAsnLeu-157
 173-IleGlnHisLysLysAlaGly-179

a015**AMPHI Regions - AMPHI**

25-ValPheXxxLeuTrpLysAsnProGluLysProLeuAlaGlyPheTrpLysAlaLeuProHis-45
 107-MetCysCysLeuThrCys-112

Antigenic Index - Jameson-Wolf

29-TrpLysAsnProGluLysProLeu-36
 90-MetArgAlaArgProArgSerThrLys-98

Hydrophilic Regions - Hopp-Woods

30-LysAsnProGluLysProLeu-36
 90-MetArgAlaArgProArgSerThrLys-98

a018-2**AMPHI Regions - AMPHI**

6-IleGlnHisLeuArg-10
 100-AspGlyAlaAlaAla-104
 152-ArgIleGlyAsnGlyTyr-157

Antigenic Index - Jameson-Wolf

1-MetValGluArgHisIleGln-7
 9-LeuArgAsnGlyHis-13
 19-ProSerGlnGlnValArg-24
 27-PheGlyGlyArgThrTyrAspPheCysAlaAspGluAlaAla-40
 67-TyrPheAlaAspAspLysPhe-73
 78-LeuArgGlyAsnLeuArg-83
 85-PheGlnThrAspLysAlaAspLeuArgThrGlyGluHisTyrAlaAspGlyAlaAla-103
 108-AlaAspIleArgVal-112
 136-ArgValAlaArgAsnLysAspMetArgAsnThrGlyLeuHisSerGlnArgIleGlyAsnGlyTyr-157

Hydrophilic Regions - Hopp-Woods

1-MetValGluArgHisIleGln-7
 35-CysAlaAspGluAlaAla-40
 67-TyrPheAlaAspAspLysPhe-73
 85-PheGlnThrAspLysAlaAspLeuArgThrGlyGluHisTyrAla-99
 108-AlaAspIleArgVal-112
 136-ArgValAlaArgAsnLysAspMetArgAsn-145
a019-2

AMPHI Regions - AMPHI

33-ProAlaAspAsnIleGlu-38
 55-GlyLysThrLeuAlaAspTyrGlyGlyTyrProSerAlaLeuAspAla-70
 80-AlaAlaTyrLeuGluAsnAlaGlyAsp-88
 90-AlaMetAlaGluAsnValArgAsnGluTrpLeuLysSer-102
 142-AlaAlaGluLeuValLysAsnThrGlyLysLeuProSerGlyCysThrLysLeuLeuGluGlnAlaAlaAlaSer-166
 173-AspAlaTrpArgArgValArg-179
 193-LeuAlaAlaAlaLeuGlySerProPheAspGlyGlyThrGlnGly-207
 215-AsnValIleGlyLysGluAlaArgLysSer-224
 229-AlaLeuLeuSerGluMet-234
 259-AsnValProAlaAlaLeuAspTyrTyrGly-268
 292-ArgArgTrpAspGluLeuAlaSerValIleSerHisMetProGluLysLeuGlnLys-310
 329-GlnGluAlaGluLysLeuTyrLysGlnAla-338
 451-ArgTyrIleSerPro-455
 495-GlnGlyLeuMetGlnValMet-501
 582-ArgAspTyrValLysLysValMet-589

Antigenic Index - Jameson-Wolf

3-ProProSerLeuLys-7
 22-SerSerThrAsnThrLeuSerAlaAspLysThrProAlaAspAsnIleGluThrAlaAspLeuSerAlaSerValProThrArgProAlaGluProGluGlyLysThrLeuAlaAspTyrGlyGlyTyrProSerAla-67
 69-AspAlaValLysGlnLysAsnAspAla-77
 85-AsnAlaGlyAspSerAlaMet-91
 103-LeuGlyAlaArgArgGln-108
 115-GluTyrAlaLysLeuGluProAlaGlyArgAlaGlnGluValGluCysTyrAlaAspSerSerArgAsnAspTyrThrArgAlaAlaGluLeuValLysAsnThrGlyLysLeuProSerGlyCys-156
 167-GlyLeuLeuAspGlyAsnAspAlaTrpArgArgValArgGly-180
 182-LeuAlaGlyArgGlnThrThrAspAlaArgAsn-192
 199-SerProPheAspGlyGlyThrGlnGlySerArgGluTyr-211
 217-IleGlyLysGluAlaArgLysSerProAsn-226
 232-SerGluMetGluSerGlyLeuSerLeuGluGlnArgSer-244
 254-GlnSerGlnAsnLeu-258
 266-TyrTyrGlyLysValAlaAspArgArgGlnLeuThrAspAspGlnIle-281
 287-AlaAlaLeuArgAlaArgArgTrpAspGlu-296
 304-MetProGluLysLeuGlnLysSerProThr-313
 320-ArgSerArgAlaAlaThrGlyAsnThrGlnGluAlaGluLysLeuTyrLys-336
 339-AlaAlaThrGlyArgAsn-344
 350-AlaGlyGluGluLeuGlyArgLysIleAspThrArgAsnAsnValProAspAlaGlyLysAsnSerVal-372
 374-ArgMetAlaGluAspGlyAlaIleLys-382
 389-ArgAsnSerArgThrAlaGlyAspAlaLysMetArgArgGlnAlaGlnAla-405
 409-PheAlaThrArgGlyPheAspGluAspLysLeuLeu-420
 438-SerAlaGluArgThrAspArgLysLeuAsnTyr-448
 454-SerProPheLysAspThrValIle-461
 464-AlaGlnAsnValAsnValAspProAla-472

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478-IleArgGlnGluSerArgPhe-484
 488-AlaGlnSerArgValGlyAla-494
 504-ThrAlaArgGluIleAlaGly-510
 520-TyrThrAlaAspGlyAsnIleArgMetGly-529
 535-AspThrLysArgArgLeuGlnAsnAsnGluVal-545
 550-GlyTyrAsnAlaGlyProGlyArgAlaArgArgTrpGlnAlaAspThrProLeuGlu-568
 579-SerGluThrArgAspTyrValLys-586
 606-LeuLysGlnArgMet-610

Hydrophilic Regions - Hopp-Woods

27-LeuSerAlaAspLysThrProAlaAspAsnIleGluThrAlaAspLeu-42
 46-ValProThrArgProAlaGluProGluGlyLysThrLeuAla-59
 69-AspAlaValLysGlnLysAsnAspAla-77
 85-AsnAlaGlyAspSerAlaMet-91
 103-LeuGlyAlaArgArgGln-108
 115-GluTyrAlaLysLeuGluProAlaGlyArgAlaGlnGluValGluCysTyrAlaAspSerSerArgAsnAsp
 TyrThrArgAlaAlaGluLeuValLysAsnThrGlyLysLeuProSerGlyCys-156
 170-AspGlyAsnAspAlaTrpArgArgValArgGly-180
 185-ArgGlnThrThrAspAlaArgAsn-192
 201-PheAspGlyGlyThrGlnGlySerArgGlu-210
 217-IleGlyLysGluAlaArgLysSerProAsn-226
 232-SerGluMetGluSer-236
 238-LeuSerLeuGluGlnArgSer-244
 270-ValAlaAspArgArgGlnLeuThrAspAspGlnIle-281
 287-AlaAlaLeuArgAlaArgArgTrpAspGlu-296
 304-MetProGluLysLeuGlnLys-310
 320-ArgSerArgAlaAlaThr-325
 327-AsnThrGlnGluAlaGluLysLeuTyrLys-336
 350-AlaGlyGluGluLeuGlyArgLysIleAspThrArgAsnAsnValProAspAlaGlyLys-369
 374-ArgMetAlaGluAspGlyAlaIleLys-382
 389-ArgAsnSerArgThrAlaGlyAspAlaLysMetArgArgGlnAlaGlnAla-405
 411-ThrArgGlyPheAspGluAspLysLeuLeu-420
 438-SerAlaGluArgThrAspArgLysLeu-446
 478-IleArgGlnGluSerArgPhe-484
 488-AlaGlnSerArgValGly-493
 504-ThrAlaArgGluIleAlaGly-510
 535-AspThrLysArgArgLeuGlnAsn-542
 554-GlyProGlyArgAlaArgArgTrpGlnAla-563
 579-SerGluThrArgAspTyrValLys-586
 606-LeuLysGlnArgMet-610

a023**AMPHI Regions - AMPHI**

42-LysGluTyrSerAlaTrpGlnAlaPhePheSerGlnThrTrpValLysValPheThrGlnValSerPheIleAla
 laValPheLeuHisAlaTrpValGly-74
 82-TyrXxxLysProPhe-86

Antigenic Index - Jameson-Wolf

1-MetValGluArgLysLeuThr-7
 41-ProLysGluTyrSer-45
 81-AspTyrXxxLysProPheGlyVal-88

Hydrophilic Regions - Hopp-Woods

1-MetValGluArgLysLeuThr-7

a025**AMPHI Regions - AMPHI**

-381-

15-AlaAlaGlnLeuGlyGlyCysProThrGlnHis-25
36-MetGlnThrValProSerAlaProValTyrAsnProTyrGlyAlaThrProTyr-53
111-AspThrValTyrLysIleSerLysCysTyrHisIle-122

126-AspPheArgAlaTrpAsnGlyMetThrAsp-135
140-IleGlyGlnIleValLysVal-146
206-AspPheArgAlaTrpAsnGlyMetThrAsp-215
220-IleGlyGlnIleValLysVal-226
248-AlaValGlnThrProValLysProAlaAla-257

261-ValGlnSerAlaProGlnPro-267
290-SerGlyThrArgSer-294
307-LysValValAlaAspPhe-312
343-GlyLeuArgGlyTyrGlyAsn-349

Antigenic Index - Jameson-Wolf

22-ProThrGlnHisPro-26
33-AsnSerGlyMetGlnThr-38

58-AlaAlaAsnAspAlaPro-63

108-ValArgGlyAspThrValTyrLysIleSerLys-118

120-TyrHisIleSerGlnAspAspPheArgAla-129

131-AsnGlyMetThrAspAsnThrLeu-138

144-ValLysValLysProAlaGly-150
157-AlaAlaValLysSerArgProAla-164
188-ValArgGlyAspThr-192
195-AsnIleSerLysArgTyrHisIleSerGlnAspAspPheArgAla-209

211-AsnGlyMetThrAspAsnThrLeu-218

224-ValLysValLysProAlaGly-230
237-AlaAlaValLysSerArgProAla-244

252-ProValLysProAlaAlaGlnProProValGlnSerAlaProGlnPro-267
270-ProAlaAlaGluAsnLysAlaVal-277
280-ProAlaProGlnSerProAlaAlaSerProSerGlyThrArgSerValGly-296

302-ArgProThrGlnGlyLysValValAlaAspPheGlyGlyAsnAsnLysGlyValAsp-320
333-AlaAspGlyLysVal-337
342-SerGlyLeuArgGlyTyrGly-348

363-TyrGlyHisAsnGln-367
370-LeuValGlyGluGlyGlnGlnValLysArgGlyGlnGln-382
387-GlyAsnThrGluAlaSerArgThrGlnLeu-396

398-PheGluValArgGlnAsnGlyLysProValAsnProAsnSer-411

Hydrophilic Regions - Hopp-Woods

108-ValArgGlyAspThr-112

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123-SerGlnAspAspPheArg-128
 144-ValLysValLysPro-148
 157-AlaAlaValLysSerArgProAla-164
 188-ValArgGlyAspThr-192
 200-TyrHisIleSerGlnAspAspPheArg-208
 224-ValLysValLysPro-228
 237-AlaAlaValLysSerArgProAla-244
 253-ValLysProAlaAla-257
 270-ProAlaAlaGluAsnLysAlaVal-277
 290-SerGlyThrArgSer-294
 313-GlyGlyAsnAsnLysGlyValAsp-320
 333-AlaAspGlyLysVal-337
 373-GluGlyGlnGlnValLysArgGlyGln-381
 389-ThrGluAlaSerArgThr-394
 400-ValArgGlnAsnGlyLysProValAsn-408

a032**AMPHI Regions - AMPHI**

11-LeuArgArgProLeuArgGln-17
 67-SerPheAlaGlyAsnValTyrProArgLeu-76
 114-ValHisGlyGlnIleGlnHisProValGlnProPheLeuArg-127
 134-LeuGlyLeuLeuArgArgPheAspVal-142

Antigenic Index - Jameson-Wolf

1-MetArgArgAsnVal-5
 10-ValLeuArgArgProLeuArg-16
 28-ArgAlaValProAlaGlyLysGlnGlyPhe-37
 41-CysArgLeuThrGlnArgGln-47
 57-AlaGlyGlnArgAsnLeuPro-63
 104-ValIleAlaHisArgGlnArgVal-111
 138-ArgArgPheAspValGlyGlyArgValGlyMet-148
 151-ThrAlaPheAspGlnProGlyAla-158
 160-LeuProProArgArgGlnLeuAlaArgGlnArgProArgIleGlnThrAlaLeuArgGlnProProGlnArg
 ArgArgLysIleAlaLeu-189
 203-HisLeuCysGlnGlnArgLysGln-210
 236-ValLysMetArgArgLysProValGlnAsnHisAsnArgProThrGlnIleSerLysLysGln-256

Hydrophilic Regions - Hopp-Woods

1-MetArgArgAsnVal-5
 10-ValLeuArgArgProLeuArg-16
 28-ArgAlaValProAlaGlyLys-34
 41-CysArgLeuThrGln-45
 104-ValIleAlaHisArgGlnArgVal-111
 138-ArgArgPheAspValGlyGly-144
 161-ProProArgArgGlnLeuAlaArgGlnArgProArgIle-173
 177-LeuArgGlnProProGlnArgArgArgLysIleAlaLeu-189

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203-HisLeuCysGlnGlnArgLysGln-210
 236-ValLysMetArgArgLysProValGlnAsnHisAsnArgProThrGlnIleSerLysLysGln-256
a033-2
AMPHI Regions - AMPHI
 6-GlnTyrGlyGlyLeuAlaGlyPheProLysArgCysGluSerGlu-20
 64-GlyGlnAlaPheGluAlaLeuAsnCys-72
 95-ValGlyAlaLeuProLysTyrLeuAlaSerAsnValValArgAspMetHisGlyLeuLeuSerThrVal-117
 120-GlnThrGlyLysValLeuAspLysIleProGlyAlaMetGlu-133
 142-IleLysThrLeuAlaGlu-147
 157-SerLeuPheGluAsnPhe-162
 168-GlyProValAspGlyHisAsnValGluAsnLeuValAspValLeuGluAspLeuArgGlyArg-188
 207-AlaGluAsnAspPro-211

 213-LysTyrHisAlaValAlaAsnLeuProLysGluSerAlaAla-226
 242-TyrThrGlnValPheGlyLys-248
 280-PheProAspArgTyrPheAspVal-287
 307-LysProValValAlaIleTyrSer-314

 316-PheLeuGlnArgAlaTyrAspGlnLeu-324
 357-AspLeuSerPheLeuArgCysIleProAsnMetIleVal-369
 390-AlaProAlaAlaValArgTyrProArg-398
 407-SerAspGlyMetGluThrValGlu-414
 419-IleIleArgArgGlu-423
 432-PheGlySerMetValAla-437
 453-MetArgPheValLysProIleAspGluGlu-462
 469-ArgSerHisAspArgIle-474
 489-AlaValLeuGluValLeu-494
 510-AspThrValThrGlyHisGly-516

 518-ProLysLysLeuLeu-522

Antigenic Index - Jameson-Wolf
 11-AlaGlyPheProLysArgCysGluSerGluTyrAspAla-23

 28-HisSerSerThrSerIle-33
 41-AlaAlaAspLysGlnLeuGlySerAspArgArgSerVal-53
 57-GlyAspGlyAlaMetThr-62
 72-CysAlaGlyAspMetAspVal-78
 85-AsnAspAsnGluMetSerIle-91

 105-AsnValValArgAspMetHisGly-112
 117-ValLysAlaGlnThrGlyLysValLeuAspLysIleProGly-130
 134-PheAlaGlnLysValGluHisLysIleLysThrLeuAlaGluGluAlaGluHisAlaLysGln-154
 166-TyrThrGlyProValAspGlyHisAsn-174
 181-ValLeuGluAspLeuArgGlyArgLysGlyPro-191
 197-IleThrLysLysGlyAsnGlyTyrLysLeuAlaGluAsnAspProValLys-213
 220-LeuProLysGluSerAlaAla-226

 228-MetProSerGluLysGluProLysProAlaAlaLysProThrTyr-242
 253-ArgAlaAlaAlaAspSerArgLeu-260
 266-AlaMetArgGluGlySerGlyLeuValGluPheGluGlnArgPheProAspArgTyrPhe-285
 345-ValGlyAlaAspGlyProThrHis-352
 370-AlaAlaProSerAspGluAsnGluCysArg-379
 395-ArgTyrProArgGlyThrGlyThr-402

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406-ValSerAspGlyMetGluThrValGluIleGlyLysGlyIleIleArgArgGluGlyGluLysThrAla-428
 457-LysProIleAspGluGluLeuIle-464
 467-LeuAlaArgSerHisAspArgIleValThrLeuGluGluAsnAlaGluGlnGlyGlyAlaGly-487
 512-ValThrGlyHisGlyAspProLysLysLeuLeuAspAspLeuGlyLeu-527
 530-GluAlaValGluArgArgValArg-537
 540-LeuSerAspArgAspAlaAlaAsn-547

Hydrophilic Regions - Hopp-Woods

13-PheProLysArgCysGluSerGluTyrAsp-22
 41-AlaAlaAspLysGlnLeuGlySerAspArgArgSerVal-53
 74-GlyAspMetAspVal-78
 85-AsnAspAsnGluMetSerIle-91
 106-ValValArgAspMetHis-111
 123-LysValLeuAspLysIleProGly-130
 134-PheAlaGlnLysValGluHisLysIleLysThrLeuAlaGluGluAlaGluHisAlaLysGln-154
 181-ValLeuGluAspLeuArgGlyArgLysGlyPro-191
 197-IleThrLysLysGlyAsnGly-203
 205-LysLeuAlaGluAsnAspProValLys-213
 220-LeuProLysGluSerAlaAla-226

228-MetProSerGluLysGluProLysProAlaAla-238
 253-ArgAlaAlaAlaAspSerArgLeu-260
 266-AlaMetArgGluGlySerGly-272

274-ValGluPheGluGlnArgPheProAspArgTyrPhe-285
 372-ProSerAspGluAsnGluCys-378
 408-AspGlyMetGluThrValGluIleGlyLysGlyIleIleArgArgGluGlyGluLysThrAla-428
 457-LysProIleAspGluGluLeuIle-464
 467-LeuAlaArgSerHisAspArgIleValThrLeuGluGluAsnAlaGluGlnGlyGly-485
 513-ThrGlyHisGlyAspProLysLysLeuLeuAsp-523
 530-GluAlaValGluArgArgValArg-537
 540-LeuSerAspArgAspAlaAlaAsn-547

a034**AMPHI Regions - AMPHI**

35-LeuAspHisAlaAla-39
 52-AsnLeuGluGlnMetArgAlaIleMetGluAlaAlaAspGln-65
 94-AlaValGluGluPheProHisIlePro-102
 152-ThrValValAsnPheSer-157
 168-IleGlyValLeuGlyAsnLeuGluThrGly-177
 186-GlyAlaValGlyLysLeuSer-192
 197-LeuThrSerValGluAspAlaValArgPheValLysAspThrGly-211
 226-TyrLysPheThrArgProProThrGly-234
 236-ValLeuArgIleAspArgIleLysGluIleHisGlnAlaLeu-249
 261-SerValProGlnGluTrpLeuLysValIleAsnGluTyrGlyGlyAsnIleGlyGluThrTyrGlyValPro
 ValGluGluIleValGluGlyIleLysHisGly-295
 314-ArgArgTyrLeuAlaGluAsn-320
 330-LeuSerLysThrIleGluAlaMetLys-338
 360-ValSerLeuGluLysMetAlaAsnArgTyrAlaLysGlyGluLeuAsnGlnIleVal-378

Antigenic Index - Jameson-Wolf

20-LeuProLysGluThrGln-25

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37-HisAlaAlaGluAsnSerTyrGly-44
 54-GluGlnMetArgAlaIleMetGluAlaAlaAspGlnVal-66
 75-SerAlaGlyAlaArgLysTyrAla-82
 106-HisGlnAspHisGlyAlaSerProAspValCysGlnArgSerIle-120
 129-MetAspGlySerLeuMetGluAspGlyLysThrProSerSerTyrGluTyr-145
 164-ValGluGlyGluIle-168
 173AsnLeuGluThrGlyGluAlaGlyGluGluAspGlyVal-185
 191-LeuSerHisAspGln-195
 199-SerValGluAspAlaValArgPheValLysAspThrGlyValAsp-213
 221-ThrSerHisGlyAla-225
 227-LysPheThrArgProProThrGlyAspValLeuArgIleAspArgIleLysGluIleHis-246
 258-GlySerSerSerValPro-263
 271-AsnGluTyrGlyGlyAsnIleGlyGlu-279
 287-GluIleValGluGlyIleLysHisGlyValArgLysValAsnIleAspThrAspLeuArgLeuAlaSerThr
 GlyAlaVal-313
 316-TyrLeuAlaGluAsnProSerAspPheAspProArgLysTyrLeuSerLysThrIleGluAlaMetLys-33
 8
 350-CysGluGlyGlnAlaGlyLysIleLysProValSerLeuGluLysMetAlaAsnArgTyrAlaLysGlyGlu
 Leu-374

Hydrophilic Regions - Hopp-Woods

54-GluGlnMetArgAlaIleMetGluAlaAlaAspGlnVal-66
 76-AlaGlyAlaArgLysTyrAla-82
 108-AspHisGlyAlaSerProAspValCysGln-117
 132-SerLeuMetGluAspGlyLysThrProSer-141
 164-ValGluGlyGluIle-168
 175-GluThrGlyGluAlaGlyGluGluAspGlyVal-185
 199-SerValGluAspAlaValArgPheValLysAspThrGlyVal-212
 235-AspValLeuArgIleAspArgIleLysGluIleHis-246
 287-GluIleValGluGlyIleLysHisGlyValArgLysValAsnIleAspThrAspLeuArgLeu-307
 320-AsnProSerAspPheAspProArgLysTyrLeuSerLysThrIleGluAlaMetLys-338
 352-GlyGlnAlaGlyLysIleLysProValSerLeuGluLysMetAlaAsnArgTyrAlaLysGlyGluLeu-37
 4

a036**AMPHI Regions - AMPHI**

6-AlaValTyrSerAlaCysAlaAla-13
 29-GlyArgCysValAsnGlnTyr-35
 59-SerSerGlyArgPheCysGlnThrIleLys-68
 106-AlaAlaSerAlaAlaGlnSer-112
 213-SerAlaCysArgThrMetHisLysThrLeuArgProTyrVal-226
 250-ArgLeuLysGluTyr-254

Antigenic Index - Jameson-Wolf

16-ProAlaArgThrSerSerSerArgArgCysValSerSerGlyArgCysValAsnGlnTyrSerSerArgAla
 spAla-41
 43-ProTrpArgArgHisSerGlyAla-50
 55-CysSerSerAspSerSerGlyArgPhe-63
 73-ProSerPheSerAlaArgLysThrCysSerAspGlyGluThrSerAlaAspSerAsnTrpArg-93
 96-HisAlaAspGlyLeuGlnThrAlaSerSer-105
 112-SerAlaXxxThrAlaArgArgMetPheThr-121
 132-GlnSerArgArgPheCysCysGlyArgArgAlaAlaArgArgValProGlnArgArgArgGluAsnArgLeu
 GlnProProAspXxxGlySerArgArgArgSerAlaTyrArgValCysLeuArgArgAlaAspGlyPheProAlaA
 rgThrHisCysArgCysArgLeuLysArgArgIleLeu-193
 199-LeuProProAspArgProAspAsnArgSerAsnGlyGlyGlySerAlaCysArgThrMetHisLysThrLeu
 ArgProTyrValArgProGlnArgGlnGlyCys-233

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239-AlaAlaArgArgArgHisArgAlaArgValArgArgLeuLysGluTyrGlnThr-256
 260-AsnLeuAlaProArgArgCysArgTyrAla-269

Hydrophilic Regions - Hopp-Woods

18-ArgThrSerSerSerArgArgCysValSerSer-28
 35-TyrSerSerArgAlaAsp-40
 45-ArgArgHisSerGly-49
 55-CysSerSerAspSerSerGlyArg-62
 75-PheSerAlaArgLysThrCysSerAspGlyGluThrSerAla-88
 114-XxxThrAlaArgArgMetPhe-120
 135-ArgPheCysCysGlyArgArgAlaAlaArgArgValProGlnArgArgGluAsnArgLeuGlnProPro
 AspXxxGlySerArgArgArgSerAlaTyr-168
 171-CysLeuArgArgAlaAspGlyPhePro-179
 182-ThrHisCysArgCysArgLeuLysArgArgIleLeu-193
 200-ProProAspArgProAspAsnArgSerAsnGlyGly-211
 217-ThrMetHisLysThrLeuArgProTyrValArgProGlnArgGlnGly-232
 239-AlaAlaArgArgArgHisArgAlaArgValArgArgLeuLysGluTyrGln-255
 262-AlaProArgArgCysArgTyr-268

a038**AMPHI Regions - AMPHI**

100-GluAlaLysAspHis-104
 157-GluLysGlyThrGlyGluLeuSerAlaValGlnGluValGluLys-171
 178-AlaProIleAlaSerLeuAsn-184
 195-GluPheGlyGlnPheLeuGluProValArgAlaTyrArgArgGlnTyrGlyVal-212

Antigenic Index - Jameson-Wolf

2-ThrAspPheArgGlnAspPhe-8
 22-GluPheThrThrLysAlaGlyArgArgSerPro-32
 38-GlyLeuPheAsnAspGlyLeu-44
 58-IleGluSerGlyIleArg-63
 85-LeuAlaGluLysGlyVal-90
 96-TyrAsnArgLysGluAlaLysAspHisGlyGluGlyGly-108
 125-ValIleSerAlaGlyThrSerValArgGluSerIleLysLeuIleGluAlaGluGlyAlaThr-145
 153-LeuAspArgMetGluLysGlyThrGlyGlu-162
 167-GlnGluValGluLysGlnTyrGlyLeu-175
 191-GlnAsnAsnProGluPheGlyGln-198
 203-ValArgAlaTyrArgArgGlnTyrGlyValGlu-213

Hydrophilic Regions - Hopp-Woods

2-ThrAspPheArgGlnAspPhe-8
 22-GluPheThrThrLysAlaGlyArgArgSer-31
 85-LeuAlaGluLysGlyVal-90
 96-TyrAsnArgLysGluAlaLysAspHisGlyGlu-106
 130-ThrSerValArgGluSerIleLysLeuIleGluAlaGluGlyAlaThr-145
 153-LeuAspArgMetGluLysGlyThrGlyGlu-162
 167-GlnGluValGluLysGlnTyr-173
 204-ArgAlaTyrArgArgGlnTyrGly-211

a040**AMPHI Regions - AMPHI**

14-AlaAlaProTyrIle-18
 28-AlaGlyIleAspAsp-32
 38-AspThrLeuAsnLysPhe-43
 78-ProHisTyrCysArgGlyLeuArgValThrAspGlu-89
 92-LeuGluGlnAlaGlnGlnPheAlaGly-100
 113-SerValSerGlyPheAlaArgAlaPro-121

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134-ArgProIleGlyValIleAspGly-141
146-TyrAlaGlyValIleArg-151
207-LeuSerAspGlyIleSerArgProAsp-215
226-GluAlaGlnSerLeuAlaGluHisAla-234
244-SerAlaValAlaAlaLeuGluGly-251
277-IleGlyThrSerIle-281
289-IleArgGlnAlaHisSerGlyAspIleProHisIleAlaAlaLeuIleArgProLeuGlu-308
320-TyrLeuGluAsnHisIleSerGluPheSerIle-330
338-TyrGlyCysAlaAlaLeuLysThrPheAlaGluAlaAsp-350
371-ArgLeuLeuAlaHisIle-376
386-SerArgLeuPheAla-390

Antigenic Index - Jameson-Wolf

11-PheArgGluAlaAlaProTyrIleArgGlnMetArgGlyLysThrLeu-26
29-GlyIleAspAspArgLeuLeuGluGlyAspThrLeuAsn-41
65-HisPheLeuAspArgHisAlaAlaAlaGlnGlyArgThrProHisTyrCysArgGlyLeuArgValThrAspGluThrSerLeuGluGlnAlaGln-96
101-ThrValArgSerArgPheGlu-107
119-ArgAlaProSerVal-123
140-AspGlyThrAspMetGluTyr-146
150-IleArgLysThrAspThrAlaAla-157
173-LeuGlyHisSerTyrSerGlyLysThrPhe-182
208-SerAspGlyIleSerArgProAspGlyThrLeu-218
224-AlaGlnGluAlaGlnSerLeuAlaGluHisAlaGlyGlyGluThrArgArgLeuIle-242
249-LeuGluGlyGlyVal-253
261-GlyAlaAlaAspGlySerLeuLeu-268
272-PheThrArgAsnGlyIleGlyThrSerIleAlaLysGluAlaPheVal-287
289-IleArgGlnAlaHisSerGlyAspIle-297
305-ArgProLeuGluGluGlnGly-311
313-LeuLeuHisArgSerArgGluTyrLeu-321
331-LeuGluHisAspGlyAsnLeuTyr-338
345-ThrPheAlaGluAlaAspCysGlyGlu-353
361-ProGlnAlaGlnAspGlyGlyTyrGlyGluArgLeu-372
377-IleAspLysAlaArgGly-382
393-ThrAsnThrGlyGlu-397
402-ArgGlyPheGlnThrAlaSerGluAspGluLeuProGluThrArgArgLysAspTyrArgSerAsnGlyArgAsnSerHisIleLeu-430

Hydrophilic Regions - Hopp-Woods

11-PheArgGluAlaAlaPro-16
19-ArgGlnMetArgGlyLysThr-25
29-GlyIleAspAspArgLeuLeuGluGlyAspThrLeuAsn-41
65-HisPheLeuAspArgHisAlaAlaAlaGlnGlyArgThr-77
84-LeuArgValThrAspGluThrSerLeuGluGln-94
102-ValArgSerArgPheGlu-107
140-AspGlyThrAspMetGluTyr-146
150-IleArgLysThrAspThrAlaAla-157
210-GlyIleSerArgProAspGly-216
224-AlaGlnGluAlaGlnSerLeuAlaGlu-232
234-AlaGlyGlyGluThrArgArgLeuIle-242
291-GlnAlaHisSerGlyAsp-296
305-ArgProLeuGluGluGlnGly-311
315-HisArgSerArgGluTyrLeu-321
345-ThrPheAlaGluAlaAspCysGlyGlu-353
362-GlnAlaGlnAspGlyGlyTyrGlyGlu-370

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377-IleAspLysAlaArgGly-382
 402-ArgGlyPheGlnThrAlaSerGluAspGluLeuProGluThrArgArgLysAspTyrArgSerAsnGlyArg
 Asn-426

a041-1**AMPHI Regions - AMPHI**

6-AspProTyrArgHisPheGluAsnLeuAspSerAlaGluThr-19
 45-AspGlyIleLeuAla-49

78-LysGlyValTyrArgValCysThrAlaAla-87
 102-ValAlaAspPheAspGluLeuLeu-109
 117-GlyValSerHisLeuValGluGlnProAsn-126
 218-MetValAsnAlaTrpArgTyrLeuAsp-226
 232-IleAspLeuIleGluAlaSer-238
 258-LeuAsnLeuProAsnAspCysAspValValGlyTyrLeu-270
 317-GlnAlaLeuGluSerValGluThr-324
 331-AlaSerLeuLeuGluAsnValGlnGlyArg-340
 354-ThrGluLeuProArgLeuProSer-361
 382-AspPheThrThrProLeu-387
 405-GlnProGlnGlnPhe-409
 451-GlyPheGlyIleProGluLeuProHisTyrLeuGlySerIleGlyLys-466
 493-AlaAlaGlnGlyIleSerLysHisLysSerValAspAspLeuLeuAlaValValSer-511

519-SerSerProGluHis-523
 541-ValArgGluProGlnSer-546
 556-LeuThrAspMetIleArgTyr-562
 571-TrpThrAspGluTyrGlyAsnProGlnLysTyrGlu-582
 591-LeuSerProTyrHisAsnLeuSerAspGlyIleAspTyrProPro-605
 620-AlaHisAlaLeuLys-624
 645-GlyHisThrGlyAsnGlyThrGlnArgGluAla-655

Antigenic Index - Jameson-Wolf

1-MetLysSerTyrProAspProTyrArgHisPheGluAsnLeuAspSerAlaGluThrGln-20
 26-AlaAsnAlaGluThrArgAlaArgPheLeuAsnAsnAspLysAlaArgAlaLeuSerAspGly-46
 51-LeuGlnAspThrArgGlnIleProPhe-59

61-GlnGluHisArgAlaArg-66
 72-GlnAspAlaGluTyrProLysGlyVal-80
 89-TyrArgSerGlyTyrProGluTrp-96
 104-AspPheAspGluLeuLeuGlyAspAspValTyr-114
 123-GluGlnProAsnArg-127
 132-LeuSerLysSerGlyGlyAspThr-139
 145-ValAspLeuGluAlaGlyGluLeuValGlu-154
 161-AlaGlyLysAsnHisValSerTrpArgAspGluAsnSerVal-174
 178-ProAlaTrpAspGluArgGlnLeuThrGluSerGlyTyrProArgGluValTrpLeuValGluArgGlyLys
 SerPheGluGluSerLeu-207
 212-IleAlaGluAspGlyMet-217
 223-ArgTyrLeuAspProGlnGlySerProIleAspLeuIleGluAlaSerAspGlyPheTyr-242
 250-SerAlaGluGlyGluAlaLysProLeuAsnLeuProAsnAspCysAspVal-266
 278-LeuArgLysAspTrpHisArgAlaAsnGlnSerTyrProSer-291
 298-LysLeuAsnArgGlyGluLeuGly-305
 312-AlaProAsnGluThrGlnAla-318
 320-GluSerValGluThrThrLys-326

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337-ValGlnGlyArgLeuLysAla-343

345-ArgPheThrAspGlyLysTrpGlnGluThrGluLeuProArgLeuProSerGly-362

365-GluMetThrAspGlnProTrpGlyGly-373

401-ValMetArgArgGlnProGlnGlnPheAspSerAspGlyIleAsn-415

422-ThrSerAlaAspGlyGluArgIle-429

435-GlyLysAsnAlaAlaProAspMet-442

479-AsnIleArgGlyGlyGlyGluPheGlyProArgTrpHis-491

496-GlyIleSerLysHisLysSerValAspAsp-505

512-AspLeuSerGluArgGlyIleSerSerProGluHis-523

528-GlyGlySerAsnGly-532

540-PheValArgGluProGlnSerIleGlyAla-549

568-GlySerSerTrpThrAspGluTyrGlyAsnProGlnLysTyrGluValCysLysArgArgLeuGlyGluLeuSerProTyr-594

596-AsnLeuSerAspGlyIleAspTyrPro-604

610-ThrSerLeuSerAspAspArgValHis-618

627-AlaLysLeuArgGluThrSerProGlnSer-636

639-TyrSerProAspGlyGlyGlyHisThrGlyAsnGlyThrGlnArgGluAlaAlaAspGluLeu-659

Hydrophilic Regions - Hopp-Woods

3-SerTyrProAspProTyrArgHis-10

12-GluAsnLeuAspSerAlaGluThr-19

26-AlaAsnAlaGluThrArgAlaArgPheLeuAsnAsnAspLysAlaArgAlaLeuSer-44

52-GlnAspThrArgGln-56

61-GlnGluHisArgAlaArg-66

72-GlnAspAlaGluTyrPro-77

104-AspPheAspGluLeuLeuGly-110

134-LysSerGlyGlyAsp-138

145-ValAspLeuGluAlaGlyGluLeuValGlu-154

166-ValSerTrpArgAspGluAsnSer-173

180-TrpAspGluArgGlnLeuThr-186

198-GluArgGlyLysSerPheGluGluSerLeu-207

212-IleAlaGluAspGlyMet-217

233-AspLeuIleGluAlaSerAsp-239

251-AlaGluGlyGluAlaLysPro-257

278-LeuArgLysAspTrpHisArg-284

298-LysLeuAsnArgGlyGluLeuGly-305

320-GluSerValGluThrThrLys-326

337-ValGlnGlyArgLeuLysAla-343

350-LysTrpGlnGluThrGluLeuProArg-358

401-ValMetArgArgGlnProGlnGlnPheAspSerAspGlyIleAsn-415

424-AlaAspGlyGluArg-428

436-LysAsnAlaAlaProAsp-441

481-ArgGlyGlyGlyGluPheGly-487

496-GlyIleSerLysHisLysSerValAspAsp-505

512-AspLeuSerGluArgGlyIleSerSer-520

540-PheValArgGluProGlnSer-546

571-TrpThrAspGluTyrGlyAsn-577

579-GlnLysTyrGluValCysLysArgArgLeuGlyGlu-590

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612-LeuSerAspAspArgValHis-618
 627-AlaLysLeuArgGluThrSer-633
 650-GlyThrGlnArgGluAlaAlaAspGluLeu-659

a042-1**AMPHI Regions** - AMPHI

17-AlaLeuSerAsnThrSerThr-23
 33-AlaValArgSerMetMetLysIle-40
 138-SerProLeuValArgIleLeuProLeuSer-147
 151-SerMetValValAlaPhePheAlaAsn-159

Antigenic Index - Jameson-Wolf

14-ArgThrSerAlaLeuSerAsnThrSerThrAlaAlaGlyProSerCys-29
 49-TyrSerLysGluThrGlyCysProCysProSerLeuArgLysAspSerSerThrGlyGlyArgProMetSerProCys-74
 77-LeuAlaAsnArgAspCysValProLysAlaAspThr-88
 93-ThrAspSerThrSerProArgProLeu-101
 122-AlaArgAlaSerLeuProLysIleArgAlaLysVal-133
 160-CysSerTyrAlaSerAlaProGlyPro-168

Hydrophilic Regions - Hopp-Woods

49-TyrSerLysGluThrGlyCys-55
 59-SerLeuArgLysAspSerSerThrGlyGlyArgProMet-71
 78-AlaAsnArgAspCysValProLysAlaAspThr-88
 94-AspSerThrSerProArg-99
 125-SerLeuProLysIleArgAlaLysVal-133

a043-2**AMPHI Regions** - AMPHI

24-ValGluProSerArg-28
 36-HisGlyGlyLeuAspGlyAlaAlaGlyPheAspGluGlyGluArg-50
 59-AlaSerGlyAspGlyPhe-64
 83-AlaGlyAspPheGlyAspGlyGlnArg-91

Antigenic Index - Jameson-Wolf

1-MetProProAlaPro-5
 11-IleArgArgGlnLysSerValMetProSerGluArgPheValGluProSerArg-28
 35-ValHisGlyGlyLeuAspGlyAlaAlaGlyPheAspGluGlyGluArgValPhe-52
 56-AlaAlaGlnAlaSerGlyAspGlyPheAla-65
 79-GlnSerAspAlaAlaGlyAspPheGlyAspGlyGlnArgThrGlyGlu-94
 96-ValLeuGlnAspValGlyGly-102
 116-AlaGluGlyGluAlaGln-121

Hydrophilic Regions - Hopp-Woods

11-IleArgArgGlnLysSerValMetProSerGluArgPheValGluProSerArg-28
 43-AlaGlyPheAspGluGlyGluArgValPhe-52
 81-AspAlaAlaGlyAspPheGlyAspGlyGlnArgThrGly-93
 116-AlaGluGlyGluAlaGln-121

a046**AMPHI Regions** - AMPHI

6-ArgProThrSerSerPro-11
 46-ThrSerCysSerGlyLeuMetValSer-54
 64-PheSerLeuPheSerSer-69
 113-LysSerAlaSerSer-117
 143-SerCysAsnAlaPheSerSer-149
 155-ThrSerLeuLeuGlyMetAlaAlaArgPheCysAlaThrVal-168

Antigenic Index - Jameson-Wolf

6-ArgProThrSerSerProProArgArgAlaCys-16
 20-IleArgThrArgSerSerAlaLysArgLysThrCysAsnAlaProGlyGlnSerIleArgProAlaSerCysS
 er-44
 57-ProAsnMetGluArgLeuPro-63
 75-SerArgTyrSerLeuGluArgThrArgAlaMetArgProGlyMetLeuAsnArgSerAlaAla-95
 105-SerLeuArgGluSerAlaSerSerLysSerAlaSerSerAlaProAlaArgSerAsnValLysGlyAspAla
 ProLeuProLysThrValTrpThrSerArgArgLeuProVal-142
 169-GluProThrCysProLeuProLys-176

Hydrophilic Regions - Hopp-Woods

7-ProThrSerSerProProArgArgAlaCys-16
 20-IleArgThrArgSerSerAlaLysArgLysThrCysAsn-32
 36-GlnSerIleArgProAlaSer-42
 58-AsnMetGluArgLeuPro-63
 75-SerArgTyrSerLeuGluArgThrArgAlaMetArg-86
 105-SerLeuArgGluSerAlaSerSerLysSerAlaSer-116
 118-AlaProAlaArgSerAsnValLysGlyAspAlaProLeu-130

a047**AMPHI Regions - AMPHI**

17-IleAlaAspIleAlaGlnAspLeuProAspGlyAla-28
 62-AlaGluAsnIleGlyAlaVal-68
 93-ArgLeuAlaLysGlnLeuGlu-99
 141-TyrIleAspGluIleAspValPhe-148
 161-SerAlaLeuLeuAla-165
 185-LeuLeuGluGlyAsn-189
 202-IleGlySerIleLeuAla-207
 247-SerGlyIleLysTrpProGluGlyCys-255
 257-IleAlaAlaValValArgAlaGlyThrGly-266
 293-IleLeuAsnGluLeuGluLysLeuIle-301

Antigenic Index - Jameson-Wolf

5-GlnAlaArgArgGlyGlyLeuLeu-12
 20-IleAlaGlnAspLeuProAspGlyAlaAsp-29
 36-TyrArgAsnAsnArgLeu-41
 51-IleGluGlyAspGlu-55
 70-ProGluLeuArgProLysGluThrSerThrArgIleMet-83
 86-GlyGlyGlyAsnIle-90
 96-LysGlnLeuGluHis-100
 106-IleIleGluCysArgProArgArgAlaGluTrpIle-117
 119-GluAsnLeuAspAsnThrLeu-125
 130-SerAlaThrAspGluThrLeuLeuAspAsnGluTyrIleAspGluIleAsp-146
 152-ThrAsnAspAspGluSerAsnIle-159
 168-LeuGlyAlaLysArgVal-173
 178-AsnArgSerSerTyr-182
 186-LeuGluGlyAsnLysIle-191
 208-HisIleArgArgGlyAspIleVal-215
 219-ProIleArgArgGlyThrAlaGluAlaIleGlu-229
 232-AlaHisGlyAspLysLysThrSer-239
 242-IleGlyArgArgIleSerGlyIleLysTrpProGluGlyCysHis-256
 262-ArgAlaGlyThrGlyGluThr-268
 277-ValIleGlnAspGlyAspHis-283
 288-ValSerArgArgArgIleLeuAsnGluLeuGluLys-299

Hydrophilic Regions - Hopp-Woods

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5-GlnAlaArgArgGlyGly-10
 20-IleAlaGlnAspLeuProAspGlyAlaAsp-29
 51-IleGluGlyAspGlu-55
 70-ProGluLeuArgProLysGluThrSerThrArgArgIleMet-83
 106-IleIleGluCysArgProArgArgAlaGluTrpIle-117
 130-SerAlaThrAspGluThrLeuLeu-137
 140-GluTyrIleAspGluIleAsp-146
 152-ThrAsnAspAspGluSerAsnIle-159
 168-LeuGlyAlaLysArgVal-173
 186-LeuGluGlyAsnLysIle-191
 209-IleArgArgGlyAspIle-214
 219-ProIleArgArgGlyThrAlaGluAlaIleGlu-229
 232-AlaHisGlyAspLysLysThrSer-239
 242-IleGlyArgArgIleSer-247
 277-ValIleGlnAspGlyAsp-282
 289-SerArgArgArgIleLeuAsnGluLeuGluLys-299

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AMPHI Regions - AMPHI

15-GlnHisLeuLeuGlu-19
 33-ThrAspAspThrValAspGlyIleGlyGlnMet-43
 50-GlnProPheGlyGln-54
 61-GluHisPheAlaProValAspGlyPheArg-70
 79-HisGlnArgPhePhe-83
 103-IleGlyValPheProAlaPhe-109
 202-ArgGlyAlaGlyGlnArgArgValSerArgHisCys-213
 217-AlaArgLeuThrGlnValPheGlnThrPhePhe-227

Antigenic Index - Jameson-Wolf

6-PheAspTyrArgThrArgLeu-12
 20-LeuIleGlyLysAsnArgHis-26
 29-LeuHisArgArgThrAspAspThrValAspGly-39
 49-AspGlnProPheGly-53
 64-AlaProValAspGlyPheArgValGlnAsnIleAspLeuAspGlyHisGlnArgPhePhe-83
 90-PheArgAsnProValCysArgArgThrArgPheCys-101
 122-GlyIleLysProAspSerProProArgPhe-131
 135-PheArgAsnArgHisLeuGlnGlySerLeuArgVal-146
 150-PheLeuLysAspAspHisArgValGly-158
 182-GlnHisThrGlySer-186
 193-ArgHisArgArgValArgSerGlyPheArgGlyAlaGlyGlnArgArgValSerArgHisCys-213
 246-ArgGlnThrAsnProArgProLysArgGlyLeu-256

Hydrophilic Regions - Hopp-Woods

21-IleGlyLysAsnArgHis-26
 31-ArgArgThrAspAspThrValAsp-38
 72-GlnAsnIleAspLeuAspGlyHisGlnArgPhePhe-83
 93-ProValCysArgArgThrArgPheCys-101
 124-LysProAspSerProProArg-130
 150-PheLeuLysAspAspHisArgVal-157
 193-ArgHisArgArgValArgSerGlyPheArgGlyAlaGlyGlnArgArgValSerArg-211
 246-ArgGlnThrAsnProArgProLysArgGlyLeu-256

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AMPHI Regions - AMPHI

10-IleGlnSerIleCysAspAlaPheGlnPheIleSerTyr-23
 25-ProLysAspTyrIleAspAlaLeuTyrLysAlaTrpGlnLys-38
 94-ValAsnGluGlyVal-98

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163-AsnProSerAspAsnIleValAspTrpValLeuLys-174
 177-ProThrMetGlyAla-181
 235-LeuGluLeuPheGluLysValAsnAla-243
 250-GlyLeuGlyGlyLeuThrThr-256
 275-AlaMetIleProAsn-279
 302-ArgValGluAspTrpProAspLeuThr-310
 315-AsnGlyLysArgValAspValAsp-322
 353-LysArgLeuValAspMetLeuAspLys-361
 367-ValAspPheThrAsnArgLeu-373
 379-ProValAspProValGlyAspGlu-386
 396-AlaThrArgMetAspLysPheThrArgGlnMet-406
 410-ThrAspLeuLeuGlyMet-415
 452-LysSerSerLysValLeuAlaPhe-459

Antigenic Index - Jameson-Wolf

4-IleLysGlnGluAspPheIle-10
 23-TyrHisProLysAspTyrIleAspAlaLeu-32
 36-TrpGlnLysGluGluAsnProAlaAlaLysAspAlaMet-48
 55-SerArgMetCysAlaGluAsnAsnArgProIleCysGlnAspThrGly-70
 88-MetSerValGluGluMetValAsnGluGlyValArgArgAlaTyrThrTrpGluGlyAsnThrLeuArgAlaSerVal-113
 116-AspProAlaGlyLysArgGlnAsnThrLysAspAsnThr-128
 137-ValProGlyAspLysValGluVal-144
 146-CysAlaAlaLysGlyGlySerGluAsnLysSerLysLeu-159
 163-AsnProSerAspAsnIle-168
 192-GlyIleGlyGlyThrProGluLysAlaValLeuMetAlaLysGluSerLeu-208
 213-AspIleGlnGluLeuGlnGluLysAlaAlaSerGlyAlaGluLeuSerThr-229
 284-ArgHisValGluPheGluLeuAspGlySerGlyProValGluLeuThrProProArgValGluAspTrpProAspLeuThrTyrSerProAspAsnGlyLysArgValAspValAspLysLeuThrLysGluGluValAlaSer-331
 345-LeuThrGlyArgAspAlaAlaHisLysArgLeuValAspMetLeuAspLysGlyGluGluLeuPro-366
 379-ProValAspProValGlyAspGluIleValGlyProAlaGlyProThrThrAlaThrArgMetAspLysPheThrArgGlnMetLeuGluGlnThrAsp-411
 417-GlyLysSerGluArgGlyLeuAlaAlaThr-425
 428-AlaIleAlaAspAsnLysAla-434
 450-AlaIleLysSerSerLys-455
 470-PheGluValLysAspMetPro-476
 481-ValAspSerLysGlyGluSerIle-488
 492-AlaProProGlnTrpGln-497

Hydrophilic Regions - Hopp-Woods

4-IleLysGlnGluAspPheIle-10
 36-TrpGlnLysGluGluAsnProAlaAlaLysAspAlaMet-48
 57-MetCysAlaGluAsnAsnArgProIleCys-66
 88-MetSerValGluGluMetValAsnGluGlyValArgArg-100
 117-ProAlaGlyLysArgGlnAsnThrLysAspAsnThr-128
 138-ProGlyAspLysValGluVal-144
 148-AlaLysGlyGlyGlySerGluAsnLysSerLysLeu-159
 195-GlyThrProGluLysAlaValLeuMetAlaLysGluSerLeu-208
 213-AspIleGlnGluLeuGlnGluLysAlaAlaSer-223
 225-AlaGluLeuSerThr-229
 284-ArgHisValGluPheGluLeuAspGly-292
 299-ThrProProArgValGluAspTrpPro-307
 313-ProAspAsnGlyLysArgValAspValAspLysLeuThrLysGluGluValAlaSer-331
 345-LeuThrGlyArgAspAlaAlaHisLysArgLeuValAspMetLeuAspLysGlyGluGluLeuPro-366
 382-ProValGlyAspGluIleVal-388

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397-ThrArgMetAspLysPheThrArgGlnMetLeuGluGlnThrAsp-411
 417-GlyLysSerGluArgGlyAlaAlaThr-425
 428-AlaIleAlaAspAsnLysAla-434
 450-AlaIleLysSerSerLys-455
 470-PheGluValLysAspMetPro-476
 481-ValAspSerLysGlyGluSerIle-488

a052

AMPHI Regions - AMPHI

40-AlaLysAlaSerLysSerAlaThrSerProLysGlyLeuAspGlyValSerLys-57
 66-ThrAlaAlaPheHisSerPheIleSerValGlyAspThrLeuThrSerMetProAsnLeuValThrMetLeu-89

Antigenic Index - Jameson-Wolf

4-ValAlaGluGluThrGluIle-10
 14-CysPheLysGlyGluProThrGlyAspSerArgLeuLeuSerThrThrLysSerAlaPro-33
 36-CysAlaAsnSerAlaLysAlaSerLysSerAlaThrSerProLysGlyLeuAspGlyValSerLysAsnSerSer-60
 95-ValValProAsnArgLeuArgLeu-102
 108-ProAlaCysLysLysValLysAsnAlaAla-117

Hydrophilic Regions - Hopp-Woods

4-ValAlaGluGluThrGluIle-10
 15-PheLysGlyGluProThrGlyAspSerArgLeu-25
 29-ThrLysSerAlaPro-33
 38-AsnSerAlaLysAlaSerLysSerAlaThrSerProLysGlyLeuAspGlyValSerLysAsnSer-59
 98-AsnArgLeuArgLeu-102
 109-AlaCysLysLysValLysAsnAlaAla-117

a075

AMPHI Regions - AMPHI

19-LysThrProThrThrIleGlnProAlaSerIleProSer-31
 65-AlaProTyrLeuArgGlnValLeu-72
 80-PheLysLysCysLeuAla-85
 116-AspPhePheGlnThrCysValAsnArgPhePheGluValValGluIleIleGlyIleGly-135

Antigenic Index - Jameson-Wolf

10-ThrMetGluLysThrLysSerAlaAlaLysThrProThr-22
 25-GlnProAlaSerIlePro-30
 52-AlaLysAlaArgGly-56
 91-PhePheArgArgProProAsnIleArgLysSerValPheGlnLysSerGluTyrAspLys-110

Hydrophilic Regions - Hopp-Woods

10-ThrMetGluLysThrLysSerAlaAlaLysThr-20
 52-AlaLysAlaArgGly-56
 91-PhePheArgArgProProAsnIleArgLysSerValPheGlnLysSerGluTyrAspLys-110

a080

AMPHI Regions - AMPHI

6-GluAlaMetGluArgLeuThrArg-13
 95-PheProAspThrValGlu-100
 108-ProValAlaArgTrpGlyAspHis-115
 144-SerAlaGluMetLeuArgArgTyrAspGluPheSerThrValLeu-158
 195-LysArgLeuArgLeuPheThrGluAlaTrpGlnHis-206

Antigenic Index - Jameson-Wolf

1-MetTrpAspAsnAlaGluAlaMetGluArgLeuThr-12
 33-AsnSerAsnHisLeuPro-38

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42-ValSerLeuLysGly-46
 50-TyrSerAspLysLysAlaLeu-56
 67-AsnIleLeuArgThrAspIleAsnGlyAlaGlnGluAlaTyrArg-81
 90-MetValArgArgArgPheProAspThrValGlu-100
 103-LeuThrGluArgLysProValAlaArgTrpGly-113
 116-AlaLeuValAspGlyGluGlyAsnValPhe-125
 127-AlaArgLeuAspArgProGlyMetPro-135
 138-ArgGlyAlaGluGlyThrSer-144
 146-GluMetLeuArgArgTyrAspGlu-153
 163-LeuGlyIleLysGlu-167
 187-ArgLeuGlyArgGluAsnGluMetLysArgLeuArgLeu-199
 207-LeuLeuArgLysAsnLysAsnArgLeuSer-216
 220-MetArgTyrLysAspGlyPheSer-227
 230-TyrAlaProAspGlyLeuProGluLysGluSerGluGlu-242

Hydrophilic Regions - Hopp-Woods

3-AspAsnAlaGluAlaMetGluArgLeuThr-12
 50-TyrSerAspLysLysAlaLeu-56
 69-LeuArgThrAspIleAsnGlyAlaGlnGluAlaTyrArg-81
 90-MetValArgArgArgPheProAspThrVal-99
 103-LeuThrGluArgLysProValAlaArgTrpGly-113
 116-AlaLeuValAspGlyGluGlyAsnValPhe-125
 127-AlaArgLeuAspArgProGly-133
 138-ArgGlyAlaGluGlyThrSer-144
 146-GluMetLeuArgArgTyrAspGlu-153
 163-LeuGlyIleLysGlu-167
 187-ArgLeuGlyArgGluAsnGluMetLysArgLeuArgLeu-199
 208-LeuArgLysAsnLysAsnArgLeuSer-216
 220-MetArgTyrLysAspGlyPheSer-227
 234-GlyLeuProGluLysGluSerGluGlu-242

a081**AMPHI Regions - AMPHI**

22-LysProValSerArgIleValThrAspSer-31
 86-ThrAlaLeuGlnMetLeuAlaLysAlaTrpArgGluAsn-98
 116-LysGluMetLeuAlaAlaValLeuArgArg-125
 135-ThrAlaGlyAsnPhe-139
 165-MetAsnHisPheGlyGluLeuAlaValLeuThrGlnIleAlaLys-179
 185-ValAsnAsnAlaMetArg-190
 198-AspGlyValGlyAspIleAlaLysAla-206
 303-LeuAsnAspValAlaGluGlyLeuLysGlyPheSerAsnIle-316
 345-AlaAlaValAspValLeuAlaArgMetPro-354
 360-ValMetGlyAspMetGlyGluLeuGlyGlu-369
 399-ValGluAlaAlaGlu-403

Antigenic Index - Jameson-Wolf

16-ProMetProSerGluSerLysProValSer-25
 27-IleValThrAspSerArgAspIleArgAlaGlyAsp-38
 44-AlaGlyGlyArgPheAspAla-50
 67-ValSerArgGluAspCysValAla-74
 77-GlyAlaLeuLysValAspAspThrLeu-85
 94-AlaTrpArgGluAsnValAsnProPhe-102
 108-GlySerGlyGlyLysThrThrValLysGluMetLeu-119
 123-LeuArgArgArgPheGlyAspAsnAlaVal-132
 138-AsnPheAsnAsnHisIle-143
 151-LysLeuAsnGluLysHisArg-157

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178-AlaLysProAspAla-182
 194-GlyCysGlyPheAspGlyValGlyAspIleAlaLysAlaLysSerGluIle-210
 213-GlyLeuCysSerAspGly-218
 223-ProGlnGluAspAlaAsn-228
 239-LeuAsnThrArgThrPheGlyIleAspSerGlyAspValHisAla-253
 280-ValProGlyArgHisAsnVal-286
 305-AspValAlaGluGlyLeuLys-311
 313-PheSerAsnIleLysGlyArgLeuAsnValLysSerGlyIleLysGly-328
 330-ThrLeuIleAspAspThrTyrAsnAlaAsnProAspSerMetLysAlaAlaVal-347
 363-AspMetGlyGluLeuGlyGluAspGluAlaAla-373
 381-AlaTyrAlaArgAspGlnGlyIle-388
 395-GlyAspAsnSerValGluAlaAlaGluLysPheGlyAla-407
 422-LeuArgHisAspLeuProGluArgAlaThrVal-432
 434-ValLysGlySerArg-438
 443-GluGluValValGluAlaLeuGluAspLys-452

Hydrophilic Regions - Hopp-Woods

17-MetProSerGluSerLysProValSer-25
 27-IleValThrAspSerArgAspIleArgAla-36
 46-GlyArgPheAspAla-50
 67-ValSerArgGluAspCysValAla-74
 77-GlyAlaLeuLysValAspAspThrLeu-85
 94-AlaTrpArgGluAsnVal-99
 109-SerGlyGlyLysThrThrValLysGluMetLeu-119
 123-LeuArgArgArgPheGlyAsp-129
 151-LysLeuAsnGluLysHisArg-157
 178-AlaLysProAspAla-182
 199-GlyValGlyAspIleAlaLysAlaLysSerGluIle-210
 223-ProGlnGluAspAlaAsn-228
 247-AspSerGlyAspValHisAla-253
 305-AspValAlaGluGlyLeuLys-311
 316-IleLysGlyArgLeuAsnVal-322
 335-ThrTyrAsnAlaAsnProAspSerMetLysAlaAlaVal-347
 363-AspMetGlyGluLeuGlyGluAspGluAlaAla-373
 381-AlaTyrAlaArgAspGlnGlyIle-388
 397-AsnSerValGluAlaAlaGluLysPheGlyAla-407
 422-LeuArgHisAspLeuProGluArgAlaThrVal-432
 443-GluGluValValGluAlaLeuGluAspLys-452

a084-2**AMPHI Regions - AMPHI**

6-ArgIleLysAsnMetAspGlnThrLeuLysAsnThrLeuGly-19
 21-CysAlaLeuLeuAla-25
 48-AlaValGlyAlaLeuAla-53
 65-PheProArgValSer-69
 96-GlnIleValGlySerIleLeuGluSer-104
 111-GluPheValGlyAsnLeuProGly-118

Antigenic Index - Jameson-Wolf

1-MetLysGlnSerAlaArgIleLysAsnMetAspGlnThrLeuLysAsnThr-17
 40-TyrGluTyrGlyTyrArgTyrSer-47
 102-LeuGluSerAsnProAlaGluAlaArgGluPheValGly-114
 139-ValSerGlyGlyGly-143

Hydrophilic Regions - Hopp-Woods

1-MetLysGlnSerAlaArgIleLysAsnMetAspGlnThrLeu-14

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105-AsnProAlaGluAlaArgGluPheVal-113

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AMPHI Regions - AMPHI

41-GluArgValSerGlnIleGlyLysMetPheAspGlyLeu-53

60-LeuLysAspAlaLeuSerAsnGlyPheAsp-69

89-ArgAsnGlyGlyArgValLeuGlyAspIleGluLeuLeuAlaAspIle-104

125-ThrSerLeuValGlyTyr-130

141-IleAlaGlyAsnIleGlyAla-147

174-GluAsnThrGluSerLeu-179

193-HisLeuAspArgTyrAspAspLeuLeuAspTyr-203

212-ArgGlyAspGlyValGln-217

225-PheCysArgAlaMetLysArgAla-232

275-HisAsnAlaThrAsnValMetAlaAlaValAlaLeuCysGluAla-289

300-HisValLysThrPheGlnGlyLeuProHisArgValGluLysIleGly-315

336-AlaAlaIleAlaGlyLeu-341

353-GlyLysGlyGlnAspPheThr-359

395-AspCysAlaThrLeuGluGluAlaValGlnLysAla-406

424-SerPheAspMetPheLysGlyTyr-431

Antigenic Index - Jameson-Wolf

4-GlnAsnLysLysIleLeu-9

23-TyrLeuArgLysAsnGlyAlaGluValAlaAlaTyrAspAlaGluLeuLysProGluArgValSerGlnIleGlyLysMetPheAsp-51

58-GlyArgLeuLysAspAlaLeuSerAsnGly-67

74-SerProGlyIleSerGluArgGlnProAspIleGluAlaPheLysArgAsnGlyGlyArgValLeuGly-96

104-IleValAsnArgArgGlyAspLysValIle-113

116-ThrGlySerAsnGlyLysThrThr-123

150-LeuGluAlaGluLeuGlnArgGluGlyLysAlaAsp-162

169-SerSerPheGlnLeuGluAsnThrGluSerLeuArgProThrAla-183

189-IleSerGluAspHisLeuAspArgTyrAspAspLeuLeu-201

204-AlaHisThrLysAlaLysIlePheArgGlyAspGlyVal-216

220-AsnAlaAspAspAlaPheCysArgAlaMetLysArgAlaGlyArgGluValLys-237

247-PheTrpLeuGluArgGluThrGlyArgLeuLysGlnGlyAsnGluAspLeuIleAla-265

291-GlyLeuProArgGluAlaLeu-297

307-LeuProHisArgValGluLysIleGlyGluLysAsnGly-319

322-PheIleAspAspSerLysGlyThrAsnVal-331

351-GlyMetGlyLysGlyGlnAspPheThrProLeuArgAspAlaLeuAlaGlyLysAlaLys-370

378-AspAlaProGlnIleArgArgAspLeuAspGlyCysAspLeuAsnMetThrAspCysAlaThrLeuGluGluAlaValGln-404

431-TyrAlaHisArgSer-435

Hydrophilic Regions - Hopp-Woods

4-GlnAsnLysLysIleLeu-9

25-ArgLysAsnGlyAlaGlu-30

32-AlaAlaTyrAspAlaGluLeuLysProGluArgValSerGln-45

59-ArgLeuLysAspAlaLeu-64

76-GlyIleSerGluArgGlnProAspIleGluAlaPheLysArgAsnGlyGly-92

104-IleValAsnArgArgGlyAspLysValIle-113

118-SerAsnGlyLysThrThr-123

150-LeuGluAlaGluLeuGlnArgGluGlyLysAlaAsp-162

174-GluAsnThrGluSerLeuArgPro-181

189-IleSerGluAspHisLeuAspArgTyrAspAspLeuLeu-201

204-AlaHisThrLysAlaLysIlePheArgGlyAspGly-215

220-AsnAlaAspAspAlaPheCysArgAlaMetLysArgAlaGlyArgGluValLys-237

247-PheTrpLeuGluArgGluThrGlyArgLeuLysGlnGlyAsnGluAspLeuIleAla-265

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291-GlyLeuProArgGluAlaLeu-297
 309-HisArgValGluLysIleGlyGluLysAsnGly-319
 324-AspAspSerLysGlyThrAsn-330
 353-GlyLysGlyGlnAsp-357
 359-ThrProLeuArgAspAlaLeuAlaGlyLysAlaLys-370
 380-ProGlnIleArgArgAspLeuAspGlyCysAsp-390
 397-AlaThrLeuGluGluAlaValGln-404
 431-TyrAlaHisArgSer-435

a086**AMPHI Regions - AMPHI**

55-MetArgThrTrpArgArgLeuValPro-63
 83-IleAsnGlyAlaThrArg-88
 99-ProThrGluLeuPheLysLeuAlaVal-107
 120-GluValLeuArgSerMetGluSerLeuGlyTrpGlnSerIleTrpArgGlyThrAlaAsn-139
 155-GluMetTyrGlyArgPhe-160
 185-SerPheValValIle-189
 228-ArgValGlnArgValValAlaPheLeuAspProTrpLysAspProGln-243
 293-GlyPhePheGlyMetCys-298
 336-TrpIleGlyIleGlnSerPhe-342

Antigenic Index - Jameson-Wolf

20-LeuAlaSerLysGluGlyGlyAsp-27
 55-MetArgThrTrpArgArg-60
 79-AlaGlyArgGluIleAsnGlyAlaThr-87
 115-PheThrArgArgGluGluValLeuArgSerMetGlu-126
 134-TrpArgGlyThrAla-138
 144-AlaThrAsnProGlnAlaArgArgGluThrLeuGluMet-156
 225-AlaProTyrArgVal-229
 236-LeuAspProTrpLysAspProGlnGlyAla-245
 265-GlyLeuGlyAlaSerLeuSerLysArgGlyPheLeu-276
 313-SerIleGlyLysGlnSerArgAspLeuGly-322
 352-LeuProThrLysGlyLeu-357
 382-IleAspTyrGluAsnArgArgLysMetArgGlyTyrArgValGlu-396

Hydrophilic Regions - Hopp-Woods

21-AlaSerLysGluGlyGlyAsp-27
 79-AlaGlyArgGluIleAsnGly-85
 115-PheThrArgArgGluGluValLeuArgSerMetGlu-126
 147-ProGlnAlaArgArgGluThrLeuGluMet-156
 238-ProTrpLysAspProGlnGly-244
 270-LeuSerLysArgGlyPheLeu-276
 316-LysGlnSerArgAspLeu-321
 382-IleAspTyrGluAsnArgArgLysMetArgGlyTyrArgValGlu-396

a087**AMPHI Regions - AMPHI**

23-ValAlaAspSerLeuArg-28
 80-GlnThrValArgGluAlaGlnGlnIle-88
 99-GlyPheGlyGlyPheValThrPheProGlyGlyLeuAlaAlaLysLeuLeu-115
 129-GlyLeuSerAsnArgHisLeuSerArgTrpAlaLysArgValLeuTyrAlaPheProLys-148
 157-ValGlyAsnProValArg-162
 192-GlyAlaAspValLeuAsnLysThrVal-200
 239-GluCysValGluPheIleThrAspMetValSerAlaTyr-251
 313-GluLysLeuAlaGluIleLeuGly-320
 330-TrpAlaGluAsnAla-334

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Antigenic Index - Jameson-Wolf

25-AspSerLeuArgAlaArgGly-31
 37-LeuGlySerLysAspSerMetGluGluArgIleValPro-49
 61-LysGlyValArgGlyAsnGlyIleLysArgLysLeu-72
 81-ThrValArgGluAlaGlnGlnIleIleArgLysHisArgVal-94
 130-LeuSerAsnArgHisLeuSerArgTrpAlaLys-140
 150-PheSerHisGluGlyGlyLeu-156
 159-AsnProValArgAlaAspIleSer-166
 171-ProAlaGluArgPheGlnGlyArgGluGlyArgLeu-182
 195-ValLeuAsnLysThrVal-200
 207-LeuProAspAsnAlaArgProGlnMetTyrHisGlnSerGlyArgGlyLysLeuGly-225
 229-AlaAspTyrAspAla-233
 249-SerAlaTyrArgAspAlaAsp-255
 284-AlaValAspAspHisGlnThrAla-291
 309-GlnLeuThrAlaGluLysLeuAlaGlu-317
 321-GlyLeuAsnArgGluLysCysLeuLys-329
 331-AlaGluAsnAlaArgThr-336
 341-HisSerAlaAspAspValAlaGlu-348

Hydrophilic Regions - Hopp-Woods

25-AspSerLeuArgAlaArgGly-31
 39-SerLysAspSerMetGluGluArgIleValPro-49
 66-AsnGlyIleLysArgLysLeu-72
 81-ThrValArgGluAlaGlnGlnIleIleArgLysHisArgVal-94
 134-HisLeuSerArgTrpAlaLys-140
 161-ValArgAlaAspIle-165
 171-ProAlaGluArgPheGlnGlyArgGluGlyArgLeu-182
 219-SerGlyArgGlyLysLeu-224
 249-SerAlaTyrArgAspAlaAsp-255
 284-AlaValAspAspHisGlnThrAla-291
 310-LeuThrAlaGluLysLeuAlaGlu-317
 322-LeuAsnArgGluLysCysLeuLys-329
 331-AlaGluAsnAlaArg-335
 341-HisSerAlaAspAspValAlaGlu-348
a088-2

AMPHI Regions - AMPHI

7-HisPheSerAsnTrpLeuThrGlyLeuAsnIlePheGlnTyrThrThr-22
 24-ArgAlaValMetAlaAlaLeu-30
 43-ThrIleArgArgLeuThrAlaLeuLysCysGlyGln-54
 88-LeuTrpGlyAsnTrpAlaAsn-94
 111-GlyPheTyrAspAspTrpArgLysValValTyr-121
 140-AlaIleIleAlaGlyLeuAlaLeu-147
 175-GlyPheLeuValLeuSerTyrLeuThrIle-184
 187-ThrSerAsnAlaValAsnLeuThrAspGlyLeuAspGlyLeuAlaThr-202
 221-HisSerGlnPheAlaGlnTyrLeuGlnLeuProTyr-232
 245-AlaMetCysGlyAlaCysLeuGlyPhe-253

Antigenic Index - Jameson-Wolf

48-ThrAlaLeuLysCysGlyGlnAlaValArgThrAspGlyProGln-62
 66-ValLysAsnGlyThrProThrMet-73
 114-AspAspTrpArgLysValValTyrLysAspProAsnGlyValSerAlaLysPhe-131
 193-LeuThrAspGlyLeuAsp-198
 312-LysLysThrLysLysArgIle-318
 328-TyrGluGlnLysGlyTrpLysGluThrGlnVal-338

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Hydrophilic Regions - Hopp-Woods

56-ValArgThrAspGlyProGln-62
 114-AspAspTrpArgLysValValTyrLysAspProAsnGlyVal-127
 312-LysLysThrLysLysArgIle-318
 331-LysGlyTrpLysGlu-335
a089

AMPHI Regions - AMPHI

44-CysGlyArgProXxxLysVal-50
 73-ThrLeuValAlaLeuCysLysProCysSerGlyIle-84
 118-SerArgProAlaArgPhe-123

Antigenic Index - Jameson-Wolf

1-MetProProLysIleThrLysSerGlyPhe-10
 40-PheSerThrArgCysGlyArgProXxxLys-49
 54-SerSerAsnAlaSerArgGlyLysProThrAlaSerHisLysAla-68
 80-ProCysSerGlyIle-84
 95-CysPheArgArgProValSerArgSerAsnGlnLysSerAlaSerTyrSerAsnGluAsnHisPheThrSerA
 rgProAlaArgPheIleAlaArgGlnAsnAlaSerSerAlaPheLysThrCysThrProSerProArgLysIleLe
 u-144

Hydrophilic Regions - Hopp-Woods

43-ArgCysGlyArgProXxxLys-49
 56-AsnAlaSerArgGlyLysProThrAlaSerHisLysAla-68
 95-CysPheArgArgProValSerArgSerAsnGlnLysSerAlaSerTyrSerAsn-112
 119-ArgProAlaArgPheIleAla-125
 137-ThrProSerProArgLysIle-143

a090-1**AMPHI Regions - AMPHI**

10-SerGlnSerLeuLysArgProAspLysHisPheArg-21
 142-AspPhePheHisAlaValArgGlnAlaLeuLysGlyPheAspValPheGluGlnCysPheAla-162

164-GlnThrAspGlyPhe-168
 177-ValSerGlyValValGlnAlaLeuGlnArg-186
 226-LeuHisArgThrThrGluArgIleValArgIleGlnAsnLeuHisThrVal-242
 253-ValValGluGlnVal-257
 268-ValGlnHisCysArgArgSerArg-275
 381-GlyAlaGluCysGlnAsnIleGluThrValGlyGluArg-393
 404-ProValLysHisLeuThrAspLeuArg-412
 425-AsnLeuArgAlaValPheAlaGlnValGlyAsnHisGlyAsnThrArgAlaAlaLysSer-444

Antigenic Index - Jameson-Wolf

9-ValSerGlnSerLeuLysArgProAspLysHisPheArg-21
 29-HisIleGluThrArgAlaGlyGlyAlaGluGlnHisAspIleAla-43
 56-PheGlnSerGlyAla-60
 73-AlaAspLeuArgArgIleAspThrAspGlnGluHis-84
 89-AlaGlyLysArgValAlaGlnGlyArgGluVal-99
 107-XxxAsnHisGluGluArgIleLeuGlnThrGlyAsnArgGlyGlyArgThrAspValArg-127
 149-GlnAlaLeuLysGlyPheAsp-155
 161-PheAlaArgGlnThrAspGlyPheAlaGlnGlyAsnGlySerHisHisValSer-178
 187-AsnIleLeuArgGlyAsnGln-193
 215-GlnArgLysProPheHisLeuAla-222
 228-ArgThrThrGluArgIleValArg-235
 269-GlnHisCysArgArgSerArgAlaGln-277
 285-GluThrGlyLysLeuGlnHis-291

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305-LeuGlnAsnArgArgAlaAspIleAlaArgAspAsnGlyIle-318

320-ProThrLeuAspAlaGluIleAlaAspGlnAlaArgTyrArgGly-334

339-AlaGlyAsnArgAsnHis-344

353-ValArgGlnGlnPhe-357

369-LysGlyLeuAspIle-373

380-AlaGlyAlaGluCysGlnAsn-386

398-AlaArgValLysHisGlnProVal-405

407-HisLeuThrAspLeuArgHis-413

421-IleIleArgSerAsnLeuArg-427

434-GlyAsnHisGlyAsnThrArgAlaAlaLysSerGlyAspGluAspPhePhe-450

Hydrophilic Regions - Hopp-Woods

11-GlnSerLeuLysArgProAspLysHisPheArg-21

29-HisIleGluThrArgAlaGlyGlyAlaGluGlnHisAspIleAla-43

73-AlaAspLeuArgArgIleAspThrAspGlnGluHis-84

89-AlaGlyLysArgValAlaGlnGlyArgGluVal-99

107-XxxAsnHisGluGluArgIleLeu-114

117-GlyAsnArgGlyGlyGlyArgThrAspValArg-127

228-ArgThrThrGluArgIleValArg-235

269-GlnHisCysArgArgSerArgAla-276

285-GluThrGlyLysLeuGln-290

305-LeuGlnAsnArgArgAlaAspIleAlaArgAspAsnGlyIle-318

322-LeuAspAlaGluIleAlaAspGlnAlaArgTyrArg-333

369-LysGlyLeuAspIle-373

380-AlaGlyAlaGluCysGlnAsn-386

398-AlaArgValLysHisGlnPro-404

409-ThrAspLeuArgHis-413

421-IleIleArgSerAsnLeu-426

437-GlyAsnThrArgAlaAlaLysSerGlyAspGluAspPhePhe-450

a091**AMPHI Regions - AMPHI**

39-ProLeuSerAspGlyIleAlaSerCys-47

49-IleThrArgPheGlnAlaLeuVal-56

61-ValLeuValSerValLeuThrSerLeuAlaLys-71

Antigenic Index - Jameson-Wolf

5-ValProProSerProAlaThr-11

38-LysProLeuSerAspGlyIleAla-45

a092**AMPHI Regions - AMPHI**

55-GlyMetSerGlyIleAlaGluValLeuHis-64

76-AlaArgAsnAlaAlaThrGluHisLeu-84

95-HisThrAlaGluHisValAsnGly-102

120-ValAlaAlaLeuGlu-124

137-AlaGluLeuMetArgPheArgAsp-144

209-LeuThrProIleMetSerValValThrAsnIleAsp-220

226-ThrTyrGlyHisSerValGluLysLeuHisGlnAlaPheIleAspPheIleHisArg-244

259-HisValArgAlaIleLeuProLysValSerLysProTyr-271

273-ThrTyrGlyLeuAspAspThrAla-280

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321-AsnValLeuAsnAlaLeuAlaIle-329
 339-ValGluAlaIleGlnLysGly-345
 353-GlyArgArgPheGlnLysTyrGlyAspIleLys-363
 407-ArgTyrThrArgThrArgAspLeuPheGluAspPheThrLysValLeuAsnThrValAspAlaLeu-428
 449-LeuAlaArgAlaIleArgValLeuGlyLysLeu-459
 464-CysGluAsnValAlaAspLeuProGluMetLeuLeuAsn-476

Antigenic Index - Jameson-Wolf

14-LeuTrpArgAlaAsnGlyGlnProPheLys-23
 25-ThrProLeuArgIleGluAsnProProGluArgAsnIleMetMetLysAsnArgVal-43
 70-ValSerGlySerAspGlnAlaArgAsnAlaAla-80
 111-AlaValLysLysGluAsnProGluVal-119
 140-MetArgPheArgAspGlyIle-146
 150-GlyThrHisGlyLysThrThrThr-157
 184-GlyThrAsnAlaArgLeuGlyLysGlyGluTyr-194
 198-GluAlaAspGluSerAspAla-204
 218-AsnIleAspGluAspHisMetAspThrTyrGly-228
 230-SerValGluLysLeuHis-235
 255-IleAspSerGluHisVal-260
 263-IleLeuProLysValSerLysProTyrAla-272
 275-GlyLeuAspAspThrAlaAsp-281
 286-AspIleGluAsnValGlyAla-292
 302-MetLysGlyHisGluGlnGlySerPhe-310
 351-GlyValGlyArgArgPheGlnLysTyrGlyAspIleLysLeuProAsnGlyGly-368
 374-AspAspTyrGlyHisHisPro-380
 393-AlaTyrProGluLysArgLeu-399
 404-GlnProHisArgTyrThrArgThrArgAspLeuPheGluAspPheThrLys-420
 435-AlaAlaGlyGluGluProIleAlaAlaAlaAspSerArgAlaLeuAlaArg-451
 466-AsnValAlaAspLeuPro-471
 478-LeuGlnAspGlyAspIle-483
 488-GlyAlaGlySerIleAsn-493

Hydrophilic Regions - Hopp-Woods

26-ProLeuArgIleGluAsnProProGluArgAsnIleMetMetLysAsnArgVal-43
 71-SerGlySerAspGlnAlaArgAsnAlaAla-80
 111-AlaValLysLysGluAsnProGlu-118
 140-MetArgPheArgAsp-144
 152-HisGlyLysThrThr-156
 187-AlaArgLeuGlyLysGlyGlu-193
 198-GluAlaAspGluSerAspAla-204
 218-AsnIleAspGluAspHisMetAsp-225
 230-SerValGluLysLeuHis-235
 256-AspSerGluHisVal-260
 275-GlyLeuAspAspThrAlaAsp-281
 303-LysGlyHisGluGlnGlySer-309
 351-GlyValGlyArgArgPheGlnLys-358
 360-GlyAspIleLysLeu-364
 393-AlaTyrProGluLysArgLeu-399
 407-ArgTyrThrArgThrArgAspLeuPheGluAspPheThrLys-420
 435-AlaAlaGlyGluGluProIleAlaAlaAlaAspSerArgAlaLeuAlaArg-451
 466-AsnValAlaAspLeuPro-471
 479-GlnAspGlyAspIle-483
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AMPHI Regions - AMPHI

26-ThrAlaIleLeuAsn-30

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59-ThrAlaPheAsnIleLeuHisGly-66
 159-LysSerValTyrGluGluLeuLysHisPhe-168
 196-IleHisIleIleProAlaThrGluPhe-204
 254-PheLeuLysAspThr-258
 267-IleAsnThrLeuProGlyMetThrGly-275

Antigenic Index - Jameson-Wolf

12-GlyGlyPheSerSerGluArgGluIleSerLeuAspSerGlyThr-26
 32-LeuLysSerLysGlyIleAsp-38
 41-AlaPheAspProLysGluThrProLeuSerGluLeuLysAlaGlnGly-56
 66-GlyThrTyrGlyGluAspGlyAlaVal-74
 96-GlyMetAspLysTyrArgCys-102
 120-HisAspAspThrAspPheAspAlaValGluGluLysLeuGly-133
 140-ProAlaAlaGluGlySerSer-146
 151-LysValLysGlyLysGlyArgLeuLysSerValTyrGluGluLeuLysHisPheGln-169
 176-ArgPheIleGlyGlyGlyGluTyrSer-184
 189-AsnGlyLysGlyLeuPro-194
 203-GluPheTyrAspTyrGluAlaLysTyrAsnArgAsnAspThr-216
 218-TyrGlnCysProSerGluAspLeuThrGluAlaGluGluSerLeuMetArg-234
 245-GlyAlaGluGlyCysVal-250
 253-AspPheLeuLysAspThrAspGly-260
 269-ThrLeuProGlyMetThr-274

Hydrophilic Regions - Hopp-Woods

15-SerSerGluArgGluIleSerLeu-22
 32-LeuLysSerLysGlyIleAsp-38
 41-AlaPheAspProLysGluThrProLeuSerGluLeuLysAla-54
 68-TyrGlyGluAspGlyAlaVal-74
 96-GlyMetAspLysTyrArgCys-102
 120-HisAspAspThrAspPheAspAlaValGluGluLysLeuGly-133
 140-ProAlaAlaGluGlySerSer-146
 151-LysValLysGlyLysGlyArgLeuLysSerValTyrGluGluLeuLysHisPheGln-169
 205-TyrAspTyrGluAlaLysTyrAsnArgAsnAspThr-216
 221-ProSerGluAspLeuThrGluAlaGluGluSerLeuMetArg-234
 253-AspPheLeuLysAspThrAspGly-260

a094**AMPHI Regions - AMPHI**

17-LeuProProIleThrLysValGlySer-25
 80-PheSerPheLeuThrAlaVal-86

Antigenic Index - Jameson-Wolf

3-SerProLeuProLysArgAlaLeu-10
 24-GlySerSerProAlaAlaProArgMetGluAla-34
 50-MetProSerArgLysArgIleAsnSerAlaAsnIleArgAlaArgGlyIleThr-67

Hydrophilic Regions - Hopp-Woods

5-LeuProLysArgAlaLeu-10
 28-AlaAlaProArgMetGluAla-34
 51-ProSerArgLysArgIleAsn-57
 60-AsnIleArgAlaArgGly-65

a095-2**AMPHI Regions - AMPHI**

9-CysAlaSerAsnLeuPheArgGlnPheGlnGlnArgGlyGlyAspAlaValAsp-26
 38-ValLeuGlnAsnValGlnGlnHisPheGlyGlnIleGlyAsnValPheAlaVal-55
 86-PheGlyGlnHisGlnArgValAsnGlyIleGluAspPheGlyLysValPheLysGlnIleAlaArg-107

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132-GlyArgArgHisPheAspGlyValValSer-141
 174-PheLeuAspArgPheAsnArgCysAlaAspPheGlnArgHisAlaAspGlyCysGlnCysValGlnHisVal-197
 204-GlnHisAspPheLys-208
 236-AspValGlyGlyIleValGlnThrValSerSerIle-247
 274-ThrValAspGluIleAspLysArgLeuMetGlnLeuLeuAsnThrVal-289
 313-GlyCysIleArgLeuValGly-319
 370-AsnGlyAspAlaValThrGluAlaHisGlnLeuArgGlnHisGlnGlyAla-386
 417-ValAsnValPheCysGly-422
 435-MetLeuGlySerGlyIleSerArgLeuIleArgThrGly-447
 451-ThrGlnIleValGlnAspPheGlyAspThrAlaHisAla-463

Antigenic Index - Jameson-Wolf

6-SerGlyGlyCysAlaSerAsnLeu-13
 17-PheGlnGlnArgGlyGlyAspAlaValAspAlaSerArgThrHisIle-32
 62-GlnHisAlaAspGlyAlaGlyLysSerAlaGlyIleSerGlyGlyAsnArgLeuPhe-80
 88-GlnHisGlnArgValAsnGlyIleGluAspPheGlyLys-100
 112ValArgLeuGluGlyGluTyr-118
 126-AlaAlaCysGlyGlyLysGlyArgArgHisPheAspGly-138
 144-ValHisGlnGluArgGlySerThr-151
 163-AlaAlaAlaAspThrPheLysAlaGluGlnAlaPhe-174
 176-AspArgPheAsnArgCysAlaAspPheGlnArgHisAlaAspGlyCysGln-192
 205-HisAspPheLysArg-209
 253-GlyGlnAsnArgAlaAspVal-259
 263-AsnThrGlnLysGlyPheAlaVal-270
 273-HisThrValAspGluIleAspLysArgLeu-282
 300-IleGlyAsnAspGlyHisAsnArgCysGlnValGlnLysGlyCys-314
 339-PheAlaAlaAspAsnGluSerArgValLysSerCysArgAlaGluAspGlyGlyGlnAlaGlyGlyArg
 GlyPheAlaValArgAlaGlyAsnGlyAspAlaValThr-375
 378-HisGlnLeuArgGlnHisGlnGlyAlaArgAsnAsnGlyAsn-391
 394-LeuGlnArgSerAspAsnPheGly-401
 405-PheAspGlyGlyArgGlyAsnAspAspIleArgThr-416
 442-ArgLeuIleArgThrGlyAsnPheLysThr-451
 455-GlnAspPheGlyAspThrAlaHisAlaAspAlaAlaAspThrAspLysMetAspVal-473

Hydrophilic Regions - Hopp-Woods

17-PheGlnGlnArgGlyGlyAspAlaValAspAlaSerArgThrHisIle-32
 64-AlaAspGlyAlaGlyLysSerAlaGly-72
 93-AsnGlyIleGluAspPheGlyLys-100
 112-ValArgLeuGluGlyGluTyr-118
 128-CysGlyGlyLysGlyArgArgHisPhe-136
 145-HisGlnGluArgGlySer-150
 163-AlaAlaAlaAspThrPheLysAlaGluGlnAlaPhe-174
 182-AlaAspPheGlnArgHisAlaAspGly-190
 205-HisAspPheLysArg-209
 273-HisThrValAspGluIleAspLysArgLeu-282
 300-IleGlyAsnAspGlyHisAsnArgCysGlnVal-310
 339-PheAlaAlaAspAsnGluSerArgValLysSerCysArgAlaGluAspGlyGlyGly-357
 368-AlaGlyAsnGlyAspAlaValThr-375
 378-HisGlnLeuArgGlnHisGlnGlyAlaArgAsnAsnGly-390
 395-GlnArgSerAspAsn-399
 407-GlyGlyArgGlyAsnAspAspIleArgThr-416
 461-AlaHisAlaAspAlaAlaAspThrAspLysMetAspVal-473

a096-2**AMPHI Regions - AMPHI**

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19-GlyIlePheGluGluIleAspAlaHis-27
 37-AlaAlaAsnArgGln-41
 61-GlyValValAlaVal-65
 112-GlnPhePheValAsnAlaPheGln-119
 129-AlaTyrAlaAlaAlaPheGlyArg-136
 172-AsnGlnPheAlaAla-176
 187-AspThrAlaAlaGlyIleGlyAsnAlaGln-196
 228-GlnTrpGlyPheLeu-232

Antigenic Index - Jameson-Wolf

4-HisThrGlyGlnGly-8
 22-GluGluIleAspAla-26
 30-PheArgThrAspCysLeuArgAlaAlaAsn-39
 73-LysLeuGlyArgGlyAspAspValTyrAla-82
 97-AlaAlaAspLysProPheGlyAsnAspPhe-106
 137-ArgPheHisLysHisArgGln-143
 157-ValGlnAspGlyGluLeuGlyAsnGlyGlnSerGlnCysLeu-170
 181-AlaAspGlyGlyCysGlyAspThr-188
 211-ThrValLysAspValGluCysArgLeu-219

Hydrophilic Regions - Hopp-Woods

22-GluGluIleAspAla-26
 33-AspCysLeuArgAlaAlaAsn-39
 74-LeuGlyArgGlyAspAspValTyr-81
 97-AlaAlaAspLysProPheGly-103
 137-ArgPheHisLysHisArgGln-143
 158-GlnAspGlyGluLeuGlyAsn-164
 183-GlyGlyCysGlyAspThr-188
 211-ThrValLysAspValGluCysArgLeu-219

a097**AMPHI Regions - AMPHI**

28-AlaGlyLeuThrThrPheLeuThrMetCysTyrIleVal-40
 72-MetGlyPheValGly-76
 166-AlaThrLeuValGlyLeuGlyAspIleHisGlnProSerAlaLeuLeuAlaLeuPheGly-185
 207-ThrIleThrValIleAlaSerLeuMetGlyLeuAsnGluPheHisGlyIleIleGlyGluValProSerIle-230
 242-LeuPheThrValSer-246
 260-PheAspSerThrGlyThr-265
 342-LeuAlaLysSerValProAlaPheAlaThr-351
 362-MetLeuArgSerAlaArgAspIle-369

Antigenic Index - Jameson-Wolf

1-MetAspThrSerLysGlnThrLeu-8
 13-PheLysLeuLysAlaAsnGlyThrThrValArgThrGluLeu-26
 125-LysValArgGluMetLeu-130
 260-PheAspSerThrGly-264
 277-ValAspGlyLysLeuProArgLeuLysArg-286
 317-SerAlaGlyGlyArgThrGly-323
 364-ArgSerAlaArgAspIleAspTrpAspAspMetThrGlu-376
 410-LeuCysArgArgThrLysAspValProPro-419

Hydrophilic Regions - Hopp-Woods

1-MetAspThrSerLys-5
 16-LysAlaAsnGlyThrThrValArgThrGluLeu-26
 125-LysValArgGluMetLeu-130

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279-GlyLysLeuProArgLeuLysArg-286
 318-AlaGlyGlyArgThr-322
 364-ArgSerAlaArgAspIleAspTrpAspAspMetThrGlu-376
 410-LeuCysArgArgThrLysAspValPro-418
a098-2
AMPHI Regions - AMPHI
 28-AlaAlaGluAlaGlyGluGlnPheValGlyAsp-38
 110-ValGlyAspPhePheLysLeuAlaPhe-118
 120-CysGlnIleGlnAsnValValThrAlaIleAlaGlnIleValAla-134
 163-LeuSerSerPheSerHisGly-169

Antigenic Index - Jameson-Wolf
 24-ValGlnGluAspAlaAlaGluAlaGlyGlu-33
 58-MetGlyMetCysArg-72
 78-PheAsnHisThrAspArgGlnAlaAla-86
 136-ThrAlaAsnGlyThrGlnSerGlyIleThrGlyArgAsnAlaArgLysArgAsnGlyPhe-155
 158-PheGluGlyArgGlyLeuSerSerPheSerHisGlyIle-170
 180-ValPheArgArgProMetArgIleCys-188

Hydrophilic Regions - Hopp-Woods
 24-ValGlnGluAspAlaAlaGluAlaGlyGlu-33
 79-AsnHisThrAspArgGlnAla-85
 144-IleThrGlyArgAsnAlaArgLysArgAsnGly-154
 158-PheGluGlyArgGly-162
 180-ValPheArgArgProMetArg-186
a099

AMPHI Regions - AMPHI
 6-SerMetMetArgLeuProAspIle-13
 47-AlaPheValGluPhePheGlyGluGly-55
 102-LysLeuValGluThrTyrAlaLysThr-110
 114-TrpAlaAspAlaLeuLysThrAla-121
 135-ThrArgAsnMetAlaGlyProSerAsn-143
 154-AlaGlyLysGlyLeuAlaLysProTyrGluGluProSerAspGlyGln-169
 178-AlaAlaIleThrSerCysThrAsnThrSerAsnProArgAsnVal-192
 251-ThrCysAsnGlyMetSer-256
 341-IleAspAlaIleValAlaGluTyr-348
 350-LysProGlnGlnPheArgAspVal-357
 371-ProSerProLeuTyrAspTrpArg-378
 381-SerThrTyrIleArg-385
 400-LeuSerGlyMetArgProLeu-406
 443-AspPheAsnSerTyrAlaThr-449
 468-PheAsnGluMetValArg-473
 494-MetArgMetTrpGluAlaIleGluThrTyrMet-504
 532-ArgLeuAlaGlyVal-536
 539-IleValAlaGluGlyPheGluArgIleHisArgThrAsn-551
 575-GlyThrGluThrTyr-579

Antigenic Index - Jameson-Wolf
 18-LeuAsnGlyLysArgLysAlaGly-25
 38-PheLeuArgLysGluArgValVal-45
 53-GlyGluGlyAlaArgSer-58
 60-SerIleGlyAspArgAlaThr-66
 70-MetThrProGluPhe-74
 83-IleAspGluGlnThr-87
 94-ThrGlyArgAspAspAlaGlnValLysLeu-103

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133-SerValThrArgAsnMetAlaGlyProSerAsnProHis-145
 153-LeuAlaGlyLysGlyLeuAlaLysProTyrGluGluProSerAspGlyGlnMetProAspGlyAla-174
 183-CysThrAsnThrSerAsnProArgAsnVal-192
 206-GlyLeuGlnArgLysProTrpValLysSerSerPheAlaProGlySerLysValAla-224
 227-TyrLeuLysGluAlaAspLeuLeuProGluMetGluLysLeu-240
 251-ThrCysAsnGlyMetSerGlyAlaLeuAspProLysIleGlnLysGluIleIleAspArgAspLeuTyr-273
 279-SerGlyAsnArgAsnPheAspGlyArgIleHisProTyrAlaLys-293
 312-IleArgPheAspIleGluAsnAspVal-320
 322-GlyValAlaAspGlyLysGluIleArgLeuLysAspIleTrpProThrAspGluGluIleAsp-342
 348-TyrValLysProGlnGlnPheArgAsp-356
 363-AspThrGlyThrAlaGlnLysAlaProSerProLeuTyrAspTrpArgProMetSerThrTyrIleArgArgProProTyrTrp-390
 394-LeuAlaGlyGluArgThrLeuSerGlyMetArg-404
 409-LeuProAspAsnIleThrThrAspHisLeuSerProSerAsn-422
 438-GlyLeuProGluGluAspPheAsnSerTyrAlaThrHisArgGlyAspHisLeuThr-456
 463-AlaAsnProLysLeuPhe-468
 471-MetValArgAsnGluAspGlySerValArgGlnGlySerLeuAlaArgValGluProGluGlyGlnThr-493
 503-TyrMetAsnArgLysGlnPro-509
 516-AlaAspTyrGlyGlnGlySerSerArgAspTrpAlaAlaLysGlyValArg-532
 543-GlyPheGluArgIleHisArgThrAsnLeu-552
 562-PheLysProGlyThrAsnArgHisThrLeuGlnLeuAspGlyThrGluThrTyrAspValValGlyGluArgThrProArgCysAspLeu-591
 595-IleHisArgLysAsnGlyGluThrValGlu-604
 609-CysArgLeuAspThrAlaGluGlu-616

Hydrophilic Regions - Hopp-Woods

18-LeuAsnGlyLysArgLysAlaGly-25
 38-PheLeuArgLysGluArgValVal-45
 53-GlyGluGlyAlaArg-57
 60-SerIleGlyAspArgAlaThr-66
 83-IleAspGluGlnThr-87
 94-ThrGlyArgAspAspAlaGlnValLysLeu-103
 157-GlyLeuAlaLysProTyrGluGluProSerAspGlyGlnMetPro-171
 227-TyrLeuLysGluAlaAspLeuLeuProGluMetGluLysLeu-240
 259-LeuAspProLysIleGlnLysGluIleIleAspArgAspLeuTyr-273
 282-ArgAsnPheAspGlyArgIle-288
 312-IleArgPheAspIleGluAsnAspVal-320
 324-AlaAspGlyLysGluIleArgLeuLysAsp-333
 335-TrpProThrAspGluGluIleAsp-342
 366-ThrAlaGlnLysAlaPro-371
 394-LeuAlaGlyGluArgThrLeuSer-401
 438-GlyLeuProGluGluAspPheAsn-445
 450-HisArgGlyAspHisLeuThr-456
 471-MetValArgAsnGluAspGlySerValArgGln-481
 485-AlaArgValGluProGluGlyGlnThr-493
 503-TyrMetAsnArgLysGlnPro-509
 518-TyrGlyGlnGlySerSerArgAspTrpAlaAlaLysGlyValArg-532
 543-GlyPheGluArgIleHisArg-549
 564-ProGlyThrAsnArgHis-569
 574-AspGlyThrGluThr-578
 580-AspValValGlyGluArgThrProArgCysAsp-590
 595-IleHisArgLysAsnGlyGluThrValGlu-604
 609-CysArgLeuAspThrAlaGluGlu-616

a102**AMPHI Regions - AMPHI**

42-ValLeuLeuTyrThrTrpPheSerMetLeu-51
 67-GlyAlaXxxPheAspThrMetValLysAspLeuGlyArgSerTrpAsnIleIleAsnGlyIleAla-89
 109-ThrAlaLysGlyLeuGlySerAlaAla-117
 128-LeuValPhePheGlyIleLeuAlaPheCys-137
 144-LeuValAspArgPheThrSerValLeu-152
 155-GlyMetValLeuThr-159
 207-AsnValSerSerLeuLeuLysTyrPheLys-216
 221-LysValAlaLysSerIle-226
 267-IleGluThrLeuSerLysPheAlaGlnThrGlyAsnMetAspLysIleLeuSerLeuPheSerTyrMetAla-290
 303-PheAspTyrIleAlaAspIlePheLysTrpAsnAsp-314
 341-PheValThrAlaIleGlyTyr-347
 352-AlaThrValTrpThrGlyIleIlePro-360
 374-GlyLysThrTyrLysVal-379

Antigenic Index - Jameson-Wolf

1-MetProThrLysThrProSerLeu-8
 77-LeuLeuGlyArgSer-81
 107-AspLeuThrAlaLysGlyLeuGlySerAlaAlaGlyGly-119
 143-ArgLeuValAspArgPheThr-149
 179-ThrGlnAlaProThrGlyThrAsn-186
 214-TyrPheLysGlyAspAlaProLysValAla-223
 246-XxxAsnLeuProArgAsnGluPhe-253
 274-AlaGlnThrGlyAsnMetAspLysIle-282
 311-LysTrpAsnAspSerValSerGlyArgThrLysThr-322
 364-LeuTyrArgSerArgLysLysPheGlyAlaGlyLysThrTyrLysVal-379

Hydrophilic Regions - Hopp-Woods

1-MetProThrLysThr-5
 143-ArgLeuValAspArgPheThr-149
 215-PheLysGlyAspAlaProLysValAla-223
 248-LeuProArgAsnGluPhe-253
 277-GlyAsnMetAspLys-281
 316-ValSerGlyArgThrLysThr-322
 366-ArgSerArgLysLysPheGlyAla-373

a105**AMPHI Regions - AMPHI**

11-TrpIleGlyLeuGly-15
 22-ValThrArgLeuLeuAsp-27
 51-LysValTyrGlyAsnThrAlaGluLeu-59
 74-AlaAlaValCysAspIleLeuAsnGlyValArgAspGlyLeu-87
 97-ThrIleSerProThr-101
 110-ValGluAlaAlaGlyGlyGlnPheAlaGluAlaProVal-122
 143-AlaValLeuAsnProLeuGlnLysIlePheSer-153
 162-PheGlyAspValGlyLysGlySer-169
 176-AsnSerLeuLeuGlyIlePheGlyGluAlaTyr-186
 203-IleValGluAlaIleGlyGlySerAla-211
 249-LeuGluGlnAlaGlyAsnThrLeuProAlaValGlu-260
 263-AlaAlaSerTyrArgLysAlaValGluAla-272

Antigenic Index - Jameson-Wolf

2-SerAlaAsnGluTyrThr-7
 25-LeuLeuAspGlyGlyIleGlu-31

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34-ValTyrAsnArgSerProAspLysThrAlaProIleSerAlaLysGlyAlaLysValTyrGlyAsnThr-56
 81-AsnGlyValArgAspGlyLeuAla-88
 96-SerThrIleSerProThrGluAsnLeuAla-105
 121-ProValSerGlySerValGlyProAlaThr-130
 139-GlyGlySerGluAla-143
 155-ValGlyLysLysThrPheHisPheGlyAspValGlyLysGlySerGly-170
 196-PheGlyIleAspThrAspThrIleVal-204
 210-SerAlaMetAspSerProMetPheGlnThrLysLysSerLeuTrpAlaAsnArgGluPheProPro-231
 237-HisAlaSerLysAspLeuAsnLeuAlaValLysGluLeuGluGlnAlaGlyAsnThrLeuPro-257
 264-AlaSerTyrArgLysAlaValGluAlaGlyTyrGlyGluGlnAspValSerGly-281

Hydrophilic Regions - Hopp-Woods

25-LeuLeuAspGlyGlyIle-30
 37-ArgSerProAspLysThrAlaProIleSerAlaLysGlyAlaLys-51
 81-AsnGlyValArgAspGlyLeuAla-88
 164-AspValGlyLysGlySerGly-170
 196-PheGlyIleAspThrAspThrIle-203
 218-GlnThrLysLysSerLeuTrpAla-225
 237-HisAlaSerLysAspLeuAsnLeuAlaValLysGluLeuGluGlnAlaGly-253
 265-SerTyrArgLysAlaValGlu-271
 273-GlyTyrGlyGluGlnAspVal-279

a109-2**AMPHI Regions - AMPHI**

6-GlyThrTyrArgAspLeuHisArgProAlaSerGlu-17
 53-LeuIleProAlaMetAlaGlyThrIleGly-62
 69-AlaValAlaAlaAlaPhe-74
 145-GlyLeuLeuMetAla-149
 156-IleMetAlaLysLeuThrSer-162
 177-GlyThrThrGlyGlnValLysLysLeuPheSerTrpAlaGly-190
 207-ValMetTyrAlaLeuLeuGluHisTrpLysLysArgTrpLeu-220
 222-ValProLeuGlyCys-226
 294-HisGlnValPheGlnLysIle-300
 326-ValGlySerIleLeuGly-331
 336-ThrSerSerTrpGlyThr-341
 471-AlaValGlyMetLeuProGlyIleProProPheLeuGluHisPheLysSerLeu-488

Antigenic Index - Jameson-Wolf

1-MetGluLysHisAsnGlyThrTyrArgAspLeuHisArgProAlaSer-16
 18-PheAlaThrArgAspGluTyrLeuGlu-26
 32-MetGlnProLysArgTrpArgProAsnLeuProPheArgAspTyrArgPheGluTrp-50
 78-LeuGlyLeuProAsp-82
 109-ProGlyAlaAsnLeuProGlyThrHis-117
 160-LeuThrSerAsnGlyVal-165
 179-ThrGlyGlnValLysLys-184
 245-AlaProGlyLeuProPro-250
 259-GluAsnSerGlyTrp-263
 301-SerTyrProGluLysThrAspLysVal-309
 312-AsnIleAspAspThrMetThr-318
 348-IleAlaLysArgProIleProGlyGly-356
 398-AlaGlyMetGluMetThrArgLysGlyLysThrThrGlnSer-411
 441-GlyCysLysGluArgSerAla-447

Hydrophilic Regions - Hopp-Woods

1-MetGluLysHisAsnGlyThrTyrArgAspLeuHisArgProAlaSer-16
 18-PheAlaThrArgAspGluTyrLeuGlu-26

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35-LysArgTrpArgPro-39
 44-ArgAspTyrArgPheGluTrp-50
 180-GlyGlnValLysLys-184
 301-SerTyrProGluLysThrAspLysVal-309
 313-IleAspAspThrMetThr-318
 348-IleAlaLysArgProIlePro-354
 398-AlaGlyMetGluMetThrArgLysGlyLysThrThrGln-410
 441-GlyCysLysGluArgSerAla-447

a111**AMPHI Regions - AMPHI**

6-ArgLeuProAsnPheIleArgThrLeu-14
 58-ProSerProAlaGluIleGlnLysArgIleAspAspAlaLeuLysGluValAsnArgGlnMetSer-79
 90-PheAsnGlnHisThrAlaGly-96
 128-GlyProLeuValAsnLeuTrp-134
 151-IleLysGlnAlaAlaSerTyrThrGly-159
 170-AspTyrAlaSerLeu-174
 183-LeuAspLeuSerSerIleAlaLys-190
 209-TyrLeuValGluIleGlyGly-215
 314-GluThrGluAlaLeu-318

Antigenic Index - Jameson-Wolf

1-MetProSerGluThrArgLeuProAsnPhe-10
 26-CysSerGluGlnThrAla-31
 37-GlnGlyGluThrMetGly-42
 49-TyrLeuSerAsnAsnArgAspLysLeuProSerProAlaGluIleGlnLysArgIleAspAspAlaLeuLysGluValAsnArgGlnMetSerThrTyrGlnProAspSerGluIleSerArgPheAsnGlnHisThrAlaGlyLysProLeuArgIleSerSerAspPhe-105
 135-GlyPheGlyProAspLysSerValThrArgGluProSerProGluGlnIleLysGln-153
 163-IleIleLeuLysGlnGlyLysAspTyrAlaSerLeuSerLysThrHisProLysAla-181
 192-PheGlyValAspLysValAlaGlyGluLeuGluLysTyrGly-205
 213-IleGlyGlyGluLeuHisGlyLysGlyLysAsnAlaArgGlyGluProTrpArgIleGlyIleGluGlnProAsnIle-238
 250-LeuAsnAsnArgSerLeuAlaThrSerGlyAspTyrArg-262
 264-PheHisValAspLysSerGlyLysArgLeuSer-274
 277-IleAsnProAsnAsnLysArgProIleSer-286
 299-AlaMetThrAlaAspGlyLeuSer-306
 314-GluThrGluAlaLeuLysLeuAlaGluArgGluLysLeu-326
 332-ValArgAspLysGlyGlyTyrArg-339
 342-MetSerSerGluPheGluLysLeuLeuArg-351

Hydrophilic Regions - Hopp-Woods

1-MetProSerGluThrArgLeu-7
 26-CysSerGluGlnThrAla-31
 51-SerAsnAsnArgAspLysLeuProSer-59
 61-AlaGluIleGlnLysArgIleAspAspAlaLeuLysGluValAsnArgGln-77
 82-GlnProAspSerGluIleSerArg-89
 97-LysProLeuArgIleSerSer-103
 137-GlyProAspLysSerValThrArgGluProSerProGluGlnIleLysGln-153
 163-IleIleLeuLysGlnGlyLysAspTyrAlaSer-173
 175-SerLysThrHisPro-179
 192-PheGlyValAspLysValAlaGlyGluLeuGluLysTyrGly-205
 217-LeuHisGlyLysGlyLysAsnAlaArgGlyGluProTrp-229
 265-HisValAspLysSerGlyLysArgLeuSer-274
 279-ProAsnAsnLysArgProIle-285
 314-GluThrGluAlaLeuLysLeuAlaGluArgGluLysLeu-326

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332-ValArgAspLysGlyGlyTyr-338
 344-SerGluPheGluLysLeuLeuArg-351
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AMPHI Regions - AMPHI
 6-ProIleGlnAspThrGlnSerAla-13
 15-LeuGlnGluLeuArgGluTrpPheAspSerTyrCysThr-27
 57-GlyGluProLeuProAspHis-63
 72-HisGluLeuAspLeuLeu-77
 79-AspAlaValAlaAlaThrLeuLeuAlaAspIleGlyArgTyr-92
 104-CysAsnSerThrValAlaGluLeuValLysGlyValAspGluValGlnLysLeuThrHisPheAlaArgVal
 AspSerLeu-130
 145-LysMetLeuLeuAlaMet-150
 170-PheLeuSerAsnAlaProAspSerProGluLys-180
 216-GluProGluLysTyrArg-221
 234-ArgLeuGluTyrIleGluAsnPheLeuAsnIleLeuArg-246
 260-GlyArgProLysHisIleTyrSerIleTyrLys-270
 282-LeuPheAspIleArg-286
 290-IleLeuValAspThrValProGluCysTyrThrThrLeuGlyIleValHisSerLeuTrpGlnProIlePro
 GlyGluPheAspAspTyrIleAla-321
 327-GlyTyrLysSerLeuHisThr-333
 351-AspMetHisGlnPheAsnGluPheGlyValAla-361
 385-GlnLeuLeuAspTrp-389
 440-HisSerSerIleGlyAspArg-446
 493-LysAlaIleGlyLysIleArgAlaTyr-501
 504-GlnGlnAsnAlaAsp-508
 521-GlnLeuAlaLysLeu-525
 532-GlnGluLeuAlaGlu-536
 539-GlyTyrLysLysProGluAspLeuTyrThr-548
 557-AsnArgAlaIleGlnLysAlaCysGlyThrLeuAsnGluProPro-571
 585-LysIleLysLysGlyGly-590
 603-MetThrThrLeuAlaLysCysCysLysProAla-613
 616-AspAspIleValGly-620
 637-SerPheArgHisLeuAlaGluHisAlaProGluLysValLeuAspAla-652
 679-ArgAspValSerAspAla-684
 714-GlnValThrAspLeuProArgValLeuAlaSerLeuGlyAspValLysGlyValLeuSerValThrArg-73
 6

Antigenic Index - Jameson-Wolf

5-SerProIleGlnAspThrGlnSerAlaThr-14
 16-GlnGluLeuArgGluTrpPheAspSerTyrCysThrAlaLeuProAsnAsnAspLysLysLeu-36
 52-AlaAlaThrProTyrGlyGluProLeuProAspHisPhe-64
 88-AspIleGlyArgTyrValProAspTrp-96
 100-ValSerGluArgCysAsnSerThrVal-108
 110-GluLeuValLysGlyValAspGluValGlnLys-120
 125-AlaArgValAspSerLeuAlaThrProGluGluArgAlaGlnGlnAlaGluThrMetArg-144
 162-AlaMetArgThrArgThr-167
 173-AsnAlaProAspSerProGluLysArgAlaValAlaLysGluThrLeu-188
 209-AspLeuGlyPheArgHisGlnGluProGluLysTyrArgGlu-222
 227-LeuAspGluLysArgThrGluArgLeuGluTyr-237
 245-LeuArgThrGluLeuLysLys-251
 258-ValAlaGlyArgProLysHis-264
 271-LysMetValLysLysLysLeuSerPhe-279
 294-ThrValProGluCysTyr-299
 311-ProIleProGlyGluPheAspAspTyrIleAlaAsnProLysGlyAsnGlyTyrLysSer-330
 335-IleValGlyProGluAspLysGlyValGluValGlnIleArgThr-349

364-TrpArgTyrLysGluGlyGlyLysGlyAspSerAlaTyrGluGlnLys-379
 387-LeuAspTrpArgGluAsnMetAlaGluSerGlyLysGluAspLeuAlaAla-403
 418-ThrProHisGlyLys-422
 440-HisSerSerIleGlyAspArgCysArgGlyAlaLysValGluGly-454
 461-ThrProLeuGluAsnGlyGlnArgValGluIleIleThrAlaLysGluGlyHisProSerValAsn-482
 487-GlyTrpValLysSerAsnLysAlaIleGlyLys-497
 502-IleArgGlnGlnAsnAlaAspThrValArgGluGluGlyArgValGlnLeuAspLysGlnLeuAla-523
 525-LeuThrProLysProAsnLeuGlnGluLeuAlaGlu-536
 538-LeuGlyTyrLysLysProGluAspLeu-546
 551-GlyGlnGlyGluIleSerAsnArgAlaIleGlnLysAlaCysGlyThrLeuAsnGluProProProValPro-574
 582-LysGlnSerLysIleLysLysGlyGlyLysAsnGlyVal-594
 596-IleAspGlyGluAspGlyLeu-602
 608-LysCysCysLysProAlaProProAspAspIleVal-619
 622-ValThrArgAspArgGlyIleSerValHisArgLysThrCysProSerPhe-638
 644-HisAlaProGluLysValLeuAsp-651
 667-IleGluIleArgAlaGlnAspArgSerGlyLeuLeuArgAspValSerAspAlaLeuAlaArgHisLysLeu-690
 696-GlnThrGlnSerArgAspLeuGluAlaSerMet-706
 710-LeuGluValLysGlnValThrAspLeuProArg-720
 726-GlyAspValLysGly-730

Hydrophilic Regions - Hopp-Woods

8-GlnAspThrGlnSer-12
 16-GlnGluLeuArgGluTrpPhe-22
 30-ProAsnAsnAspLysLysLeu-36
 100-ValSerGluArgCysAsnSerThr-107
 110-GluLeuValLysGlyValAspGluValGlnLys-120
 125-AlaArgValAspSer-129
 131-AlaThrProGluGluArgAlaGlnGlnAlaGluThrMetArg-144
 162-AlaMetArgThrArgThr-167
 174-AlaProAspSerProGluLysArgAlaValAlaLysGluThrLeu-188
 209-AspLeuGlyPheArgHisGlnGluProGluLysTyrArgGlu-222
 227-LeuAspGluLysArgThrGluArgLeuGluTyr-237
 245-LeuArgThrGluLeuLysLys-251
 258-ValAlaGlyArgProLysHis-264
 271-LysMetValLysLysLysLeuSerPhe-279
 314-GlyGluPheAspAsp-318
 323-ProLysGlyAsnGly-327
 337-GlyProGluAspLysGlyValGluValGlnIleArgThr-349
 365-ArgTyrLysGluGlyGlyLysGlyAspSerAlaTyrGluGln-378
 387-LeuAspTrpArgGluAsnMetAlaGluSerGlyLysGluAspLeuAlaAla-403
 443-IleGlyAspArgCysArgGlyAlaLysValGluGly-454
 463-LeuGluAsnGlyGlnArgValGluIleIleThrAlaLysGluGlyHisPro-479
 489-ValLysSerAsnLysAlaIleGlyLys-497
 505-GlnAsnAlaAspThrValArgGluGluGlyArgValGlnLeuAspLysGlnLeuAla-523
 538-LeuGlyTyrLysLysProGluAspLeu-546
 553-GlyGluIleSerAsn-557
 582-LysGlnSerLysIleLysLysGlyGlyLys-591
 596-IleAspGlyGluAspGlyLeu-602
 608-LysCysCysLysProAlaProProAspAspIle-618
 622-ValThrArgAspArgGlyIleSerValHisArgLysThrCysPro-636
 644-HisAlaProGluLysValLeu-650
 667-IleGluIleArgAlaGlnAspArgSerGlyLeuLeuArgAspValSerAspAlaLeuAlaArgHisLysLeu-690

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697-ThrGlnSerArgAspLeuGluAlaSerMet-706
 710-LeuGluValLysGlnValThrAspLeuProArg-720
 726-GlyAspValLysGly-730

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AMPHI Regions - AMPHI

24-GlyLysTrpTyrAsp-28
 57-IleProArgAspIle-61
 65-IleGlyThrIleIleAspPheLeuMetValProAsn-76
 94-IleHisGluArgTyrGluArgPheThrThrMetLeuArg-106

Antigenic Index - Jameson-Wolf

2-CysGluPheLysAspPheArgArgAsnIleProCys-13
 15-GluGluTyrAspGluAsnSerPhe-22
 24-GlyLysTrpTyrAspAspGlyValTrpAspAspGluGluTyrTrpLysLeuGluAsnAspLeuIleGluValA
 rgLysLysTyrProTyrProMetAspIleProArgAspIle-61
 86-ProTrpLeuProAspSer-91
 93-GlyIleHisGluArgTyrGluArg-100
 109-PheThrGluLysAspIleVal-115
 119-PheAspTyrTyrAsnLysLys-125

Hydrophilic Regions - Hopp-Woods

2-CysGluPheLysAspPheArgArgAsnIleProCys-13
 15-GluGluTyrAspGlu-19
 30-GlyValTrpAspAspGluGluTyrTrpLysLeuGluAsnAspLeuIleGluValArgLysLysTyrProTyr-
 53
 96-GluArgTyrGluArg-100
 109-PheThrGluLysAspIleVal-115
 121-TyrTyrAsnLysLys-125

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AMPHI Regions - AMPHI

6-LysAsnIlePheSerAla-11
 49-SerGlyAsnAlaTyrLysIleValSerThrIleLys-60
 77-AsnThrLeuHisProThrTyrTyrArgAspIleArgArg-89
 142-IleThrAsnGlyLysLysLeuTyrSerValGlyGlyLeuAsnLysAlaGly-158
 189-ProSerLeuAsnAsnIleProAla-196

Antigenic Index - Jameson-Wolf

35-SerGlySerTyrGly-39
 45-ThrPheGluArgSerGlyAsnAlaTyrLys-54
 68-PheGluSerGlyGlyThrValVal-75
 85-ArgAspIleArgArgGlyLysLeuTyrAlaGlu-95
 97-LysPheAlaAspGlySerValThrTyrGlyLysAlaGlyGluSerLysThrGluGlnSerProLysAla-119
 131-AlaAsnAspAlaLysLeuProProGlyLeuLysIleThrAsnGlyLysLysLeuTyrSer-150
 153-GlyLeuAsnLysAlaGlyThrGlyLysTyrSerIleGlyGlyValGluThrGluValValLysTyrArgVal
 ArgArgGlyAspAspAlaVal-183
 199-GlyTyrThrAspAspGlyLysThrTyr-207
 218-GlyGlnAlaAlaLysPro-223

Hydrophilic Regions - Hopp-Woods

45-ThrPheGluArgSerGlyAsn-51
 85-ArgAspIleArgArgGlyLysLeuTyrAla-94
 107-LysAlaGlyGluSerLysThrGluGlnSerProLysAla-119
 131-AlaAsnAspAlaLysLeu-136
 143-ThrAsnGlyLysLysLeuTyr-149
 155-AsnLysAlaGlyThrGly-160

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167-ValGluThrGluValValLysTyrArgValArgArgGlyAspAspAla-182
 200-TyrThrAspAspGlyLysThrTyr-207
 219-GlnAlaAlaLysPro-223

a121-1**AMPHI Regions - AMPHI**

68-GlnGluLeuSerArgLeuTyrAlaGlnThr-77
 101-ThrValArgHisAlaPro-106
 148-ProAlaPheHisGlu-152
 165-LeuAsnIleGlyGlyIleAlaAsnIle-173
 189-ProGlyAsnMetLeuMetAspAlaTrpMetGlnAla-200
 216-GlyAsnIleLeuProGlnLeuLeuAspArgLeuLeu-227
 237-ProLysSerThrGly-241
 251-GluThrTyrLeuAsp-255
 262-AspValLeuArgThrLeuSerArgPheThrAlaGlnThrValPheAspAlaValSerHis-281
 303-AlaAspLeuAlaGluCysPhe-309
 341-ValAsnArgIleProGlySerPro-348

Antigenic Index - Jameson-Wolf

13-ThrSerMetAspGlyAlaAsp-19
 23-IleArgMetAspGlyGlyLysTrpLeuGly-32
 40-ProTyrProGlyArgLeuArgArgLysLeuLeuAspLeuGlnAspThrGlyAlaAspGluLeuHisArgSerA
 rgMetLeuSer-67
 86-AsnLeuAlaProSerAspIleThrAla-94
 97-CysHisGlyGlnThrValArgHisAlaProGluHisSerTyrSer-111
 119-LeuLeuAlaGluArgThrGln-125
 129-ValGlyAspPheArgSerArgAspLeuAlaAlaGlyGlyGlnGly-143
 154-LeuPheArgAspAspArgGluThrArgAla-163
 177-ProProAspAlaPro-181
 184-GlyPheAspThrGlyProGlyAsn-191
 205-ProTyrAspLysAsnGlyAlaLysAlaAlaGlnGlyAsn-217
 235-ProHisProLysSerThrGlyArgGlu-243
 253-TyrLeuAspGlyGlyGluAsnArgTyrAspValLeuArgThrLeuSer-268
 283-AlaAlaAspAlaArgGln-288
 293-GlyGlyGlyIleArgAsnProValLeu-301
 344-IleProGlySerProHisLysAlaThrGlyAlaSerLysProCysIle-359

Hydrophilic Regions - Hopp-Woods

13-ThrSerMetAspGlyAlaAsp-19
 43-GlyArgLeuArgArgLysLeuLeuAspLeuGlnAspThrGlyAlaAspGluLeuHisArgSerArgMetLeuS
 er-67
 101-ThrValArgHisAlaPro-106
 119-LeuLeuAlaGluArgThrGln-125
 131-AspPheArgSerArgAspLeuAlaAla-139
 154-LeuPheArgAspAspArgGluThrArgAla-163
 206-TyrAspLysAsnGlyAlaLysAlaAlaGln-215
 236-HisProLysSerThrGlyArgGlu-243
 254-LeuAspGlyGlyGluAsnArgTyrAspVal-263
 283-AlaAlaAspAlaArgGln-288
 344-IleProGlySerProHisLysAlaThrGlyAlaSer-355

a122-1**AMPHI Regions - AMPHI**

6-AsnIleHisLysThrPhe-11
 42-ThrPheLeuArgCysLeuAsnAlaLeuGluMetProGlu-54
 102-LeuGluAsnValMetGlu-107
 126-LysLeuLeuGluLys-130

176-ProGluLeuValGlnAspValLeuAsnAlaMetLysGluLeuAlaArgGluGly-193

227-ProLysGluLeuPheAspHisPro-234

Antigenic Index - Jameson-Wolf

5-ArgAsnIleHisLysThrPheGlyLysAsnThrIle-16

23-AspValCysLysGlyGln-28

34-GlyProSerGlySerGlyLysThrThr-42

51-GluMetProGluAspGlyGlnIleGluPheAspAsnGluArgProLeuLysIleAspPheSerLysLysProSerLysHisAspIle-79

81-AlaLeuArgArgLysSerGlyMet-88

96-PheProHisLysThrAlaLeu-102

114-GlyLysProAlaAlaGlnAlaArgGluGluAlaLeuLysLeuLeuGlu-129

131-ValGlyLeuGlyAspLysValAspLeu-139

145-SerGlyGlyGlnGlnGlnArgValGlyIle-154

168-AspGluProThrSerAlaLeuAspProGluLeuVal-179

184-AsnAlaMetLysGluLeuAlaArgGluGlyTrp-194

222-ValGluGlnGlySerProLysGluLeuPheAspHisProLysHisGluArgThrArgArgPheLeuSer-244

Hydrophilic Regions - Hopp-Woods

51-GluMetProGluAspGlyGlnIleGluPheAspAsnGluArgProLeuLysIleAspPheSerLysLysProSerLysHisAsp-78

81-AlaLeuArgArgLysSerGly-87

114-GlyLysProAlaAlaGlnAlaArgGluGluAlaLeuLysLeuLeuGlu-129

131-ValGlyLeuGlyAspLysValAsp-138

168-AspGluProThrSerAlaLeuAspProGluLeuVal-179

184-AsnAlaMetLysGluLeuAlaArg-191

224-GlnGlySerProLysGluLeuPheAspHisProLysHisGluArgThrArgArgPheLeu-243

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AMPHI Regions - AMPHI

26-LeuLysGlnSerValArg-31

73-GlyCysGlnSerValGlnGluAla-80

112-PheGlnLeuValGluAla-117

143-LeuAspAlaGlyCysGln-148

150-LeuMetProTrpAlaAlaProIleGlyThrGlyLeuGlyAlaVal-164

213-SerGlyAspProValAsnMetAlaArgAlaPhe-223

Antigenic Index - Jameson-Wolf

7-GluThrPheProSerArgLeu-13

24-GluIleLeuLysGlnSerValArgThrAlaArg-34

41-SerLeuArgArgAlaGlyCysGlyGlyGluAlaHisGlyGlnGlyPhe-56

85-GlnMetAlaArgGluValPheGlu-92

99-GluLeuIleGlyAspAspThrLeuGln-108

121-LeuIleLysAspGlyPheLysValLeu-129

141-ArgLeuLeuAspAlaGlyCys-147

171-ValLeuArgGluArgLeuProAspThrProLeu-181

209-AlaValSerArgSerGlyAspProValAsn-218

228-GluSerGlyArgLeuAlaPhe-234

237-GlyProValGluAlaArgAspLysAlaGlnAlaSerThrProThrVal-252

Hydrophilic Regions - Hopp-Woods

24-GluIleLeuLysGlnSerValArgThrAlaArg-34

41-SerLeuArgArgAlaGlyCysGlyGlyGluAlaHis-52

85-GlnMetAlaArgGluValPheGlu-92

100-LeuIleGlyAspAspAspThrLeuGln-108

171-ValLeuArgGluArgLeuProAsp-178
 210-ValSerArgSerGlyAspPro-216
 228-GluSerGlyArgLeuAlaPhe-234
 237-GlyProValGluAlaArgAspLysAlaGlnAla-247

a127**AMPHI Regions - AMPHI**

6-MetLeuAspThrTrpLeuGlyAla-13
 22-GluSerValAlaVal-26
 119-ValGlyAspTyrIleGluIle-125
 135-IleAsnLeuLeuAsnThrLeuMet-142
 147-ProAsnProLeuValGlyGlnLeuAla-155
 206-LeuGluProLeuCysAlaPro-212
 214-IleProAlaIleGlnArgHisLeuGluAsnValGln-225
 250-ArgIleIleValArgPheAlaSerProVal-259
 268-AlaValMetAspGluPheLeuArgVal-276

Antigenic Index - Jameson-Wolf

16-IleArgAlaGluAlaValGlu-22
 41-HisPheLysArgHisProAspPheGlyIleGluSerLysArgArgPheLeuVal-58
 112-SerAlaThrGlnGlnTyrSerVal-119
 126-AsnGlyLeuArgGlyArgValValAsp-134
 169-HisProValArgArgAspAsnIleLeu-177
 193-LeuAspSerAspGluAlaValCysArg-201
 233-ProAlaAlaLysProArgValThrArgValProTyrAspAspLysAlaTyr-249
 257-SerProValSerLysArgLeuGluIle-265
 283-TyrProAlaGlySerGluThrLeu-290

Hydrophilic Regions - Hopp-Woods

16-IleArgAlaGluAlaValGlu-22
 42-PheLysArgHisProAspPheGlyIleGluSerLysArgArgPheLeuVal-58
 126-AsnGlyLeuArgGlyArgValVal-133
 170-ProValArgArgAspAsnIleLeu-177
 193-LeuAspSerAspGluAlaValCysArg-201
 235-AlaLysProArgValThrArgValProTyrAspAspLysAlaTyr-249
 259-ValSerLysArgLeuGluIle-265
 285-AlaGlySerGluThrLeu-290

a128-1**AMPHI Regions - AMPHI**

43-AlaGlnThrHisThrGlyTrpAlaAsnThrValGluProLeuThrGlyIleThrGluArgValGlyArgIleT
 rpGlyValValSerHisLeuAsnSerValThrAspThrProGlu-81
 85-AlaTyrAsnGluLeuMetProGluIle-93
 102-GlnAspIleGluLeuTyrAsnArgPheLysThrIleLysAsnSerProGluPheAsp-120
 166-PheSerGlnAsnValLeuAspAlaThrAsp-175
 189-GlyIleProGluAspAla-194
 2118-HisTyrLeuAlaVal-222
 231-LeuArgGluGlnIleTyr-236
 245-GluLeuSerAspAspGlyLysPheAspAsnThrAlaAsnIleAspArgThrLeuGluAsnAlaLeu-266
 269-AlaLysLeuLeuGlyPheLysAsnTyrAlaGlu-279
 286-MetAlaAspThrProGluGlnValLeuAsnPheLeuHisAspLeuAlaArgArgAla-304
 313-AlaGluValLysAlaPhe-318
 359-GlyLysValLeuAsnGlyLeuPheAlaGlnIleLysLysLeuTyrGly-374
 425-GlyArgArgArgPhe-429
 472-LeuHisHisLeuLeuThrGlnValAspGluLeu-482
 496-GluLeuProSerGlnPhe-501
 565-GlyArgLeuLysAsnTrpGlnGlnValLeuAspSerVal-577

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584-ValArgProProGluTyrAsnArgPheAlaAsnSerPheGlyHisIlePheAlaGlyGly-603
 610-SerTyrAlaTrpAlaGlu-615
 623-AlaAlaPheGluGluSerAspAsp-630
 636-LysArgPheTrpGlnGluIleLeuAla-644
 651-AlaAlaGluSerPheLysAlaPheArg-659

Antigenic Index - Jameson-Wolf

9-LeuGlyGluGluProArgPheAspGlnIleLysThrGluAspIleLysProAlaLeu-27
 32-AlaGluAlaArgGluGlnIleAla-39
 43-AlaGlnThrHisThrGlyTrp-49
 51-AsnThrValGluProLeuThr-57
 59-IleThrGluArgValGlyArgIleTrp-67
 75-SerValThrAspThrProGluLeuArgAlaAlaTyr-86
 100-IleGlyGlnAspIleGluLeuTyrAsnArgPheLysThrIleLysAsnSerProGluPheAspThr-121
 123-SerHisAlaGlnLysThrLysLeuAsnHisAspLeuArgAsp-136
 140-SerGlyAlaGluLeuProProGluGlnGlnAlaGluLeuAlaLysLeuGlnThrGluGlyAlaGlnLeu-162
 165-LysPheSerGlnAsnVal-170
 172-AspAlaThrAspAla-176
 190-IleProGluAspAla-194
 202-AlaGlnSerGluGlyLysThrGlyTyrLys-211
 226-AlaAspAsnArgLysLeuArgGluGlnIle-235
 240-ValThrArgAlaSerGluLeuSerAspAspGlyLysPheAspAsnThrAlaAsnIleAspArgThrLeuGlu-263
 285-LysMetAlaAspThrProGluGln-292
 300-LeuAlaArgArgAlaLysProTyrAlaGluLysAspLeuAlaGlu-314
 316-LysAlaPheAlaArgGluSerLeuGly-324
 335-TyrAlaGlyGluLysLeuArgGluAlaLysTyrAlaPheSerGluThrGluValLysLys-354
 376-GlyPheThrGluLysThrVal-382
 387-LysAspValArgTyrPheGluLeuGlnGlnAsnGlyGluThrIle-401
 409-TyrAlaArgGluGlyLysArgGlyGlyAla-418
 420-MetAsnAspTyrLysGlyArgArgArgPheSerAspGlyThrLeu-434
 446-ThrProProValGlyGlyLysGluAlaArgLeuSerHisAspGlu-460
 478-GlnValAspGluLeuGlyVal-484
 496-GluLeuProSerGln-500
 516-SerAlaHisGluGluThrGlyVal-523
 560-SerGluAspAspGluGlyArgLeuLysAsn-569
 575-AspSerValArgLysGluValAlaValValArgProProGluTyrAsnArgPhe-592
 605-SerAlaGlyTyrTyrSerTyr-611
 625-PheGluGluSerAspAspValAlaAlaThrGlyLysArgPheTrp-639
 646-GlyGlySerArgSerAlaAlaGluSerPheLysAlaPheArgGlyArgGluProSerIle-665
 669-LeuArgHisSerGlyPheAspAsnAlaAla-678

Hydrophilic Regions - Hopp-Woods

9-LeuGlyGluGluProArgPheAspGlnIleLysThrGluAspIleLysPro-25
 32-AlaGluAlaArgGluGlnIleAla-39
 59-IleThrGluArgValGly-64
 77-ThrAspThrProGluLeuArgAlaAlaTyr-86
 100-IleGlyGlnAspIleGluLeu-106
 111-LysThrIleLysAsnSerProGluPheAspThr-121
 123-SerHisAlaGlnLysThrLysLeuAsnHisAspLeuArgAsp-136
 143-GluLeuProProGluGlnGlnAlaGluLeuAlaLysLeuGlnThrGluGlyAlaGlnLeu-162
 190-IleProGluAspAla-194
 202-AlaGlnSerGluGlyLysThrGlyTyr-210
 226-AlaAspAsnArgLysLeuArgGluGlnIle-235

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242-ArgAlaSerGluLeuSerAspAspGlyLysPheAspAsn-254
 256-AlaAsnIleAspArgThrLeuGlu-263
 285-LysMetAlaAspThrProGlu-291
 300-LeuAlaArgArgAlaLysProTyrAlaGluLysAspLeuAlaGlu-314
 316-LysAlaPheAlaArgGluSerLeuGly-324
 335-TyrAlaGlyGluLysLeuArgGluAlaLysTyrAlaPheSerGluThrGluValLysLys-354
 377-PheThrGluLysThr-381
 387-LysAspValArgTyr-391
 396-GlnAsnGlyGluThr-400
 409-TyrAlaArgGluGlyLysArgGlyGly-417
 423-TyrLysGlyArgArgArgPheSerAsp-431
 449-ValGlyGlyLysGluAlaArgLeuSerHisAspGlu-460
 478-GlnValAspGluLeuGly-483
 516-SerAlaHisGluGluThrGly-522
 560-SerGluAspAspGluGlyArgLeuLysAsn-569
 575-AspSerValArgLysGluValAlaVal-583
 585-ArgProProGluTyrAsnArg-591
 625-PheGluGluSerAspAspValAlaAlaThrGly-635
 647-GlySerArgSerAlaAlaGluSerPheLysAlaPheArgGlyArgGluProSerIle-665
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AMPHI Regions - AMPHI

16-ThrLeuValSerGlyIle-21
 36-GlySerGlySerPheGly-41
 56-GlnProValGlyGlnLeu-61
 91-AsnValProAsnAlaPro-96
 110-GlnGlyPheAspThrLeuPheGlnHisAlaLeuAsnGlyPheAsnAlaMet-126
 171-ThrAlaSerAlaPro-175
 204-PheGluAlaThrCysGln-209
 211-CysHisGlyGlySerIleProGlyIlePro-220
 234-LysGlyLysGluThr-238
 245-GluGlyPheAsnAlaMet-250

Antigenic Index - Jameson-Wolf

1-MetLysGlnLeuArgAspAsnLysAlaGlnGlySer-12
 35-AlaGlySerGlySerPheGlyAspValAspAlaThrThrGluAlaAlaThrGlnThrArgIleGlnProValGly-59
 63-MetGlyAspGlyIleProValGlyGluArgGlnGlyGlu-75
 87-AlaAlaAspSerAsnValProAsnAlaProLysLeuGluHisAsnGlyAspTrpAla-105
 108-IleAlaGlnGlyPhe-112
 126-MetProAlaLysGlyGlyAla-132
 134-AspLeuThrAspGlnGluLeuLysArg-142
 148-AlaAsnLysSerGlyGlySerPheProAsnProAspGluAlaAlaProAlaAspAsnAlaAlaSerGlyThrAlaSerAlaProAlaAspSerAlaAlaProAlaGluAlaLysAlaGluAspLysGlyAlaAla-192
 197-GlyValAspGlyLysLysValPheGlu-205
 221-GlyIleGlyLysLysAspAspTrpAlaProArgIleLysLysGlyLysGluThrLeuHis-240
 251-ProAlaLysGlyGlyAsnAlaGlyLeuSerAspAspGluValLysAla-266
 274-GlnSerGlyAlaLys-278

Hydrophilic Regions - Hopp-Woods

1-MetLysGlnLeuArgAspAsnLysAlaGlnGly-11
 41-GlyAspValAspAlaThrThrGluAlaAlaThr-51
 68-ProValGlyGluArgGlnGlyGlu-75
 87-AlaAlaAspSerAsnVal-92
 96-ProLysLeuGluHisAsnGly-102
 127-ProAlaLysGlyGlyAla-132

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134-AspLeuThrAspGlnGluLeuLysArg-142
 156-ProAsnProAspGluAlaAlaProAlaAspAsnAlaAla-168
 174-AlaProAlaAspSerAlaAlaProAlaGluAlaLysAlaGluAspLysGlyAlaAla-192
 198-ValAspGlyLysLysValPheGlu-205
 222-IleGlyLysLysAspAspTrpAlaProArgIleLysLysGlyLysGluThrLeuHis-240
 251-ProAlaLysGlyGlyAsn-256
 258-GlyLeuSerAspAspGluValLysAla-266

a132-2**AMPHI Regions - AMPHI**

13-IleIleSerAlaLeuAlaVal-19
 70-AlaThrCysMetAlaMetVal-76
 92-ValGlnGlnThrGlnGlnAlaProLysProValSerAsnThr-105

Antigenic Index - Jameson-Wolf

26-GlnHisGlyLysGlyAlaAspAla-33
 38-GlySerGlySerGlySerAla-44
 81-HisThrThrLysHisGlyLeuAspPhe-89
 91-AsnValGlnGlnThrGlnGlnAlaProLysProValSerAsnThrGluProSerAlaProValProGlnGlnGlnLys-116

Hydrophilic Regions - Hopp-Woods

28-GlyLysGlyAlaAspAla-33
 97-GlnAlaProLysProValSerAsnThrGluProSerAla-109

a134**AMPHI Regions - AMPHI**

39-IleGlnSerAlaGlyThrVal-45
 47-GlyLysLysThrGly-51
 56-SerAspTrpMetAspIleGluLysGlnArg-65
 83-ValAsnLeuLeuAspThrProGlyHis-91
 97-AspThrTyrArgValLeuThrAlaVal-105
 114-AlaAlaLysGlyValGlu-119
 123-IleLysLeuLeuAsnValCysArg-130
 142-LysTyrAspArgGluVal-147
 149-AspSerLeuGluLeuLeuAspGluValGluAsnIleLeuGln-162
 176-LysAsnPheLysGlyValTyrHisIleLeu-185
 201-HisGluPheAspIleIleLysGlyIleAspAsn-211
 254-PheGlySerAlaIle-258
 265-GluIleLeuAsnSerLeuIleGluTrpAla-274
 322-LysPheGluArgGlyMetLys-328
 361-AspIleIleGlyIleProAsnHis-368
 377-PheSerGluGlyGlu-381
 395-LeuPheArgSerValArgIleLys-402
 404-ProLeuLysIleLysGln-409
 411-GlnLysGlyLeuGlnGlnLeuGlyGlu-419
 423-ValGlnValPheLysProMetSer-430
 449-SerArgLeuAlaAsnGluTyr-455
 481-AlaGluPheGluLysAlaAsn-487
 515-ArgTrpProAspIle-519

Antigenic Index - Jameson-Wolf

4-GluIleLeuAspGlnValArgArgArgThrPhe-15
 19-SerHisProAspAlaGlyLysThrThrLeuThr-29
 43-GlyThrValLysGlyLysLysThrGlyLysPheAlaThr-55
 57-AspTrpMetAspIleGluLysGlnArgGly-66
 76-PheAspTyrLysAspHisThrVal-83

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85-LeuLeuAspThrProGlyHisGlnAspPheSerGluAspThrTyrArg-100
 113-AspAlaAlaLysGlyValGlu-119
 129-CysArgLeuArgAsnThrPro-135
 140-MetAsnLysTyrAspArgGluValArgAspSerLeuGluLeuLeuAspGluValGluAsn-159
 173-GlyMetGlyLysAsnPheLys-179
 194-AlaGlyGlyGluArgLeuProHis-201
 207-LysGlyIleAspAsnProGluLeuGluGlnArgPheProLeu-220
 223-GlnGlnLeuArgAspGluIleGluLeu-231
 235-AlaSerAsnGluPheAsnLeu-241
 275-ProAlaProLysProArgAspAlaThrValArgMetValGluProAspGluProLysPhe-294
 302-GlnAlaAsnMetAspProLysHisArgAspArgIleAla-314
 317-ArgValCysSerGlyLysPheGluArgGlyMetLysMetLysHisLeuArgIleAsnArgGluIleAla-339
 9
 348-SerHisAspArgGluLeuValGlu-355
 365-IleProAsnHisGly-369
 373-IleGlyAspSerPheSerGluGlyGluGln-382
 399-ValArgIleLysAsnProLeuLysIleLysGlnLeuGlnLysGlyLeuGlnGlnLeuGlyGluGluGlyAla-422
 450-ArgLeuAlaAsnGluTyrGlyVal-457
 473-SerCysAspAspLysLysLysLeuAlaGluPheGluLysAlaAsnAla-488
 503-AlaProAsnArgValAsnLeu-509
 511-LeuThrGlnGluArgTrpProAspIleVal-520
 523-GluThrArgGluHisSerVal-529

Hydrophilic Regions - Hopp-Woods

4-GluIleLeuAspGlnValArgArgArgThr-14
 21-ProAspAlaGlyLys-25
 43-GlyThrValLysGlyLysLysThrGlyLys-52
 59-MetAspIleGluLysGlnArgGly-66
 77-AspTyrLysAspHisThr-82
 92-GlnAspPheSerGluAspThrTyr-99
 113-AspAlaAlaLysGlyValGlu-119
 129-CysArgLeuArgAsn-133
 142-LysTyrAspArgGluValArgAspSerLeuGluLeuLeuAspGluValGluAsn-159
 194-AlaGlyGlyGluArgLeuProHis-201
 207-LysGlyIleAspAsnProGluLeuGluGlnArgPheProLeu-220
 223-GlnGlnLeuArgAspGluIleGluLeu-231
 277-ProLysProArgAspAlaThrValArgMetValGluProAspGluProLysPhe-294
 305-MetAspProLysHisArgAspArgIleAla-314
 319-CysSerGlyLysPheGluArgGlyMetLysMetLysHisLeuArgIleAsnArgGluIleAla-339
 348-SerHisAspArgGluLeuValGlu-355
 376-SerPheSerGluGlyGluGln-382
 399-ValArgIleLysAsnProLeuLysIleLysGlnLeuGlnLysGlyLeu-414
 417-LeuGlyGluGluGlyAla-422
 473-SerCysAspAspLysLysLysLeuAlaGluPheGluLysAlaAsnAla-488
 512-ThrGlnGluArgTrpPro-517
 523-GluThrArgGluHisSerVal-529

a135**AMPHI Regions - AMPHI**

29-ThrIleThrArgGlnLeuAlaAlaLeu-37
 85-GluTyrThrAlaAsnLeu-90
 169-AspIleAspGlyLeuTyrThr-175
 185-ValArgLeuAspLysIleGluHis-192
 212-GlyMetLeuThrLysIle-217
 236-LeuLysProAspAla-240

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242-AlaGluAlaAlaAspAsnGln-248
 284-AlaGluHisAlaLeuSer-289
 300-IleAlaGlyIleGluGly-305
 308-SerArgMetAspThrValThrValTyr-316
 318-LysAlaThrLysGlnPro-323
 335-AlaAlaGluAspLeuLeuLysLeuArg-343

Antigenic Index - Jameson-Wolf

1-MetLysTyrLysArgIleVal-7
 11-GlyThrSerSerIleThrHisSerAspGlySerLeuSerArgGlyLysIle-27
 60-GlyPheLysLysArgProValLysIleAlaAspLysGlnAlaSer-74
 90-LeuSerSerAspGlyIle-95
 105-AlaAspPheAlaAspLysArgArgTyrGlnAsnAlaGlyGly-118
 124-LeuGlnArgArgAlaVal-129
 132-IleAsnGluAsnAspThrValSerValGluGluLeuLysIleGlyAspAsnAspThrLeu-151
 176-GlyAsnProAsnSerAsnProAspAlaValArgLeuAspLysIleGluHisIleAsn-194
 202-GlyGlySerGlySerAlaAsnGlyThrGly-211
 215-ThrLysIleLysAla-219
 224-ThrGluSerGlyVal-228
 233-CysSerSerLeuLysProAspAlaLeuAlaGluAlaAlaAspAsnGlnAlaAspGly-251
 257-ArgAlaLysGlyLeuArgThrGlnLysGln-266
 271-TyrSerGluSerArgGlyGlyValTyrValAspGluGlyAlaGluHisAlaLeuSerGluGlnGlyLysSer
 LeuLeu-296
 305-GlyHisPheSerArgMetAspThr-312
 317-SerLysAlaThrLysGlnProLeuGlyLysGlyArgVal-329
 335-AlaAlaGluAspLeuLeuLysLeuArgLysAlaLys-346
 350-IleHisArgAspAspTrpIleSer-357

Hydrophilic Regions - Hopp-Woods

1-MetLysTyrLysArgIleVal-7
 16-ThrHisSerAspGlySerLeuSerArgGlyLysIle-27
 60-GlyPheLysLysArgProValLysIleAlaAspLysGlnAlaSer-74
 105-AlaAspPheAlaAspLysArgArgTyrGlnAsn-115
 124-LeuGlnArgArgAlaVal-129
 133-AsnGluAsnAspThrValSerValGluGluLeuLysIleGlyAspAsnAspThrLeu-151
 178-ProAsnSerAsnProAspAlaValArgLeuAspLysIleGluHisIleAsn-194
 215-ThrLysIleLysAla-219
 236-LeuLysProAspAlaLeuAlaGluAlaAlaAspAsnGlnAlaAsp-250
 257-ArgAlaLysGlyLeuArgThrGlnLys-265
 272-SerGluSerArgGly-276
 278-ValTyrValAspGluGlyAlaGluHisAlaLeuSerGluGlnGlyLys-293
 306-HisPheSerArgMetAspThr-312
 318-LysAlaThrLysGlnProLeuGlyLysGlyArgVal-329
 335-AlaAlaGluAspLeuLeuLysLeuArgLysAlaLys-346
 351-HisArgAspAspTrp-355

a136**AMPHI Regions** - AMPHI

50-IleArgGlnCysIleArgGln-56
 84-GlnCysHisAspGlyIleLysGlnLeuPheLysArgPheIleIleAspGlyPheLysProIleGlyArgHis-
 107
 119-CysValLysIleAla-123
 148-ArgHisCysGlnAsn-152
 170-GlnHisPheGlyGlnPro-175
 177-GluArgCysGlnPheVal-182
 194-AsnLeuValAlaThr-198

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210-GlnPheAlaGlnPro-214
 216-PheGlyCysPheGlyLysPheSerGlyIleHisHisPhe-228
 247-LysAlaThrLysProGlnThrValGlnIleValArg-258

Antigenic Index - Jameson-Wolf

1-MetGluThrAsnAla-5
 34-AlaAspGlyLeuArgLeuValAspArgLeuProVal-46
 48-ValAspIleArgGlnCysIle-54
 69-LeuGlnThrAspSer-73
 84-GlnCysHisAspGlyIleLysGlnLeuPhe-93
 99-AspGlyPheLysProIleGlyArgHisAsnIle-109
 139-IleArgHisArgGlyGlyCysPheHisArgHisCysGlnAsnGlnProPheAsp-156
 159-ThrPheGlyGlyGlyLysLeuArg-166
 171-HisPheGlyGlnProValGluArg-178
 184-ProAlaGlnGlnArgArgHisLysThr-192
 214-ProProPheGlyCysPheGlyLysPheSerGly-224
 242-AsnLeuAsnGlnAspLysAlaThrLysProGln-252
 257-ValArgGlnGlyGluAlaThrProTyr-265
 270-AsnProLeuTyrArgArgAsnAlaVal-278

Hydrophilic Regions - Hopp-Woods

35-AspGlyLeuArgLeuValAspArgLeuProVal-46
 48-ValAspIleArgGlnCysIle-54
 87-AspGlyIleLysGlnLeuPhe-93
 185-AlaGlnGlnArgArgHisLysThr-192
 244-AsnGlnAspLysAlaThrLysProGln-252
 273-TyrArgArgAsnAlaVal-278

a137**AMPHI Regions - AMPHI**

24-LeuSerTyrIleLeuGlyPhe-30
 49-ThrLysGluSerLeu-53
 55-AspPheLeuThrTrpGly-60
 78-PheSerAspTyrLeuAlaHisProLeuAspIlePheLysValTrpGluGlyGly-95
 101-GlyPheLeuGlyValValIle-107
 120-PheLeuLysLeuMetAspThrValAlaProLeuValPro-132
 139-ArgIleGlyAsnPheIle-144
 149-TrpGlyArgValThrAspIleAsnAlaPhe-158
 178-ProLeuTrpAlaGluTrpLeuGlnGlnTyr-187
 190-LeuProArgHisProSerGlnLeu-197
 232-TyrGlyIlePheArgPheIleAlaGluPheAlaArgGlnProAspAspTyrLeuGly-250

Antigenic Index - Jameson-Wolf

36-LeuGlyArgArgArgIleAlaGln-43
 48-PheThrLysGluSerLeuAspAsp-55
 92-TrpGluGlyGlyMet-96
 113-GlyArgLysHisGlyIle-118
 136-AlaSerGlyArgIle-140
 164-ProGlnAlaArgTyrGluAspLeuGluAla-173
 191-ProArgHisProSerGlnLeu-197
 214-PheSerLysLysGlnArgProThrGly-222
 241-PheAlaArgGlnProAspAspTyrLeu-249
 277-PheGlyMetLysLysGlnHis-283

Hydrophilic Regions - Hopp-Woods

37-GlyArgArgArgIleAla-42

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48-PheThrLysGluSerLeuAsp-54
 166-AlaArgTyrGluAspLeuGluAla-173
 216-LysLysGlnArgProThrGly-222
 241-PheAlaArgGlnProAspAspTyr-248
 278-GlyMetLysLysGlnHis-283
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AMPHI Regions - AMPHI
 21-ProTyrIleArgArgPheSerGlySer-29
 74-AsnAlaMetLeuGluLysVal-80
 85-GluPheValGlnGlyMet-90
 109-ValAsnLysGluIleValSerMetIleAsnThrTyrGly-121
 152-IleGlyGlnValGlyThrValGluSerIle-161
 163-ThrGlyLeuValLysGlyLeu-169
 199-GlyLysLeuAlaGluGluLeu-205
 213-MetThrAsnIleAlaGlyValMetAspLysThrGlyAsnLeuLeuThrLysLeuThr-231
 234-ArgIleAspGluLeuIle-239
 247-GlyMetLeuProLysIleAlaSerAlaValGluAlaAlaValAsn-261
 276-AlaLeuLeuGluIlePheThrAspAla-285

Antigenic Index - Jameson-Wolf
 1-MetGluSerGluAsnIle-6
 9-AlaAlaAspLysAlaArgIleLeu-16
 23-IleArgArgPheSerGlySer-29
 35-TyrGlyGlyAsnAlaMetThr-41
 43-ProAlaLeuLysGluGlyPheAla-50
 68-GlyGlyGlyProGln-72
 76-MetLeuGluLysValGlyLysLysGlyGluPhe-86
 91-ArgValThrAspLysGluAlaMetAsp-99
 109-ValAsnLysGluIle-113
 128-SerGlyArgAspAspHisPheIleLysAlaLysLysLeuLeuIleAspThrProGluGlnAsnGlyValAsp
 IleGlyGln-154
 159-GluSerIleAspThrGlyLeu-165
 169-LeuIleGluArgGlyCysIle-175
 182-GlyValGlyGluLysGlyGluAla-189
 200-LysLeuAlaGluGluLeuAsnAlaGluLys-209
 219-ValMetAspLysThrGlyAsnLeuLeuThrLysLeuThrProLysArgIleAspGluLeuIleAla-240
 259-AlaValAsnGlyValLys-264
 269-IleAspGlyArgValProAsnAla-276
 292-LeuGlyGlyGlyGluAspAla-298

Hydrophilic Regions - Hopp-Woods
 1-MetGluSerGluAsn-5
 9-AlaAlaAspLysAlaArgIleLeu-16
 43-ProAlaLeuLysGluGlyPheAla-50
 76-MetLeuGluLysValGlyLysLysGlyGluPhe-86
 91-ArgValThrAspLysGluAlaMetAsp-99
 109-ValAsnLysGluIle-113
 128-SerGlyArgAspAspHisPheIleLysAlaLysLysLeuLeuIleAspThrProGluGlnAsnGlyValAsp
 -151
 183-ValGlyGluLysGlyGluAla-189
 200-LysLeuAlaGluGluLeuAsnAlaGluLys-209
 219-ValMetAspLysThrGly-224
 230-LeuThrProLysArgIleAspGluLeuIleAla-240
 269-IleAspGlyArgVal-273
 294-GlyGlyGluAspAla-298

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a140**AMPHI Regions - AMPHI**

10-TyrLeuAsnArgThr-14
 26-IleGlyArgAspTyrSerPhePhe-33
 45-SerLeuAspSerValGluLysThrAlaGly-54
 68-AsnAlaAlaArgThrAlaSer-74
 108-SerAlaThrProGluThrValGluThrAlaAla-118
 135-ArgAlaAlaAlaAlaValGlnHisAlaAsnAlaAlaAspGlyValArgIlePheAsnAsnLeuAlaAlaThrVal-159
 175-LeuLysAlaValSerAspGlyLeuAsp-183
 189-LeuArgValIleAlaGln-194
 254-SerLeuPheAlaGly-258
 266-IleGlyTyrLeuLysGlyLeuPheSerTyr-275
 290-GluHisAlaGluGlySer-295
 303-LeuGlyAlaLeuGly-307
 352-GlyThrLeuValGlyLeu-357
 391-GlyGlyPheThrGlyAlaThr-397
 412-ArgLeuValAlaGlyLeu-417
 425-AsnGlyTrpAsnGlyLeuAlaArg-432

Antigenic Index - Jameson-Wolf

2-SerAlaGlyGlyLysGlyAlaGlyTyrLeuAsnArgThrGlyGlnArgValPro-19
 25-LysIleGlyArgAspTyrSer-31
 35-AsnIleGluThrAspGlyGlyLeu-42
 47-AspSerValGluLysThrAlaGlySerGluGlyAspThrLeu-60
 63-TyrValArgArgGlyAsnAlaAlaArgThrAlaSer-74
 86-HisAlaValGluGlnGlyGlySerAsnLeuGlu-96
 102-LeuAspAlaSerGluSerSerAlaThrProGluThrValGlu-115
 117-AlaAlaAlaAspArgThrAspMetProGlyIleArgProTyrGly-131
 144-AsnAlaAlaAspGly-148
 160-TyrAlaAspSerThrAlaAla-166
 169-AspMetGlnGlyArgArgLeuLysAlaValSerAspGlyLeuAspHisAsnAlaThrGly-188
 195-ThrGlnGlnAspGlyGlyThrTrpGluGlnGlyGlyValGluGlyLysMetArgGlySerThrGln-216
 221-AlaAlaLysThrGlyGluAsnThrThr-229
 240-ThrTrpSerGluAsnSerAlaAsnAlaLysThrAspSer-252
 259-IleArgHisAspAlaGlyAsp-265
 274-SerTyrGlyArgTyrLysAsnSerIleSerArgSerThrGlyAlaAspGluHisAlaGluGlySerValAsn-297
 315-AlaThrGlyAspLeuThrValGluGlyGlyLeuArg-326
 333-AspAlaPheAlaGluLysGlySerAlaLeuGlyTrpSerGlyAsnSerIleThrGluGlyThr-353
 362-LeuSerGlnProLeuSerAspLysAla-370
 377-GlyValGluArgAspLeuAsnGlyArgAspTyrThrVal-389
 399-AlaThrGlyLysThrGlyAlaArgAsnMetProHisThr-411
 421-ValGluPheGlyAsnGlyTrp-427
 434-SerTyrAlaGlySerLysGlnTyrGlyAsnHisSerGlyArgValGlyVal-450

Hydrophilic Regions - Hopp-Woods

3-AlaGlyGlyLysGly-7
 36-IleGluThrAspGly-40
 47-AspSerValGluLysThrAlaGlySerGluGlyAspThr-59
 64-ValArgArgGlyAsnAlaAlaArgThrAlaSer-74
 86-HisAlaValGluGlnGlyGlySerAsnLeu-95
 102-LeuAspAlaSerGluSerSerAlaThrProGluThrValGlu-115
 117-AlaAlaAlaAspArgThrAspMetProGly-126
 144-AsnAlaAlaAspGly-148

169-AspMetGlnGlyArgArgLeuLysAlaValSerAspGlyLeuAspHisAsnAlaThr-187
 205-GlyGlyValGluGlyLysMetArgGlySerThr-215
 223-LysThrGlyGluAsnThrThr-229
 244-AsnSerAlaAsnAlaLysThrAspSer-252
 259-IleArgHisAspAlaGlyAsp-265
 277-ArgTyrLysAsnSerIleSerArgSerThrGlyAlaAspGluHisAlaGluGlySerVal-296
 333-AspAlaPheAlaGluLysGlySer-340
 364-GlnProLeuSerAspLysAla-370
 377-GlyValGluArgAspLeuAsnGlyArgAspTyrThr-388
 399-AlaThrGlyLysThrGlyAlaArgAsnMetPro-409

a141**AMPHI Regions - AMPHI**

11-GlnSerSerThrMetArgProIleGlyGluIle-21
 32-IleGluProTyrGly-36
 44-ProAlaGluAlaPheLysLeuPro-51
 80-AlaAspAlaLeuArgHisIle-86
 131-PheHisAlaIleGlyAla-136
 139-AsnLeuLeuAlaAlaMetLeuAspAsn-147
 174-GlnLeuArgAsnIleIleAspGlyMetGlyLysProValAspGlyValMetArgPro-192
 212-AspIleSerAspLeuLysGluArgLeuGly-221
 245-MetAlaAlaLeuLeuLysAspAlaIleLysProAsnLeu-257
 259-GlnThrIleGluGlyThrPro-265
 272-ProPheAlaAsnIleAlaHisGlyCysAsnSerValThrAlaThrArgLeuAlaLysHisLeuAlaAspTyrAla-296
 330-AlaThrValArgAla-334
 351-LeuAspAlaLeuGluLysGlyLeuProAsnLeuLeuLysHisIleSerAsnLeuLysAsnValPheGly-373
 406-SerLeuThrGluValTrpGlyLys-413
 420-AspLeuAlaArgLysValValAsnAlaIleGluSerGln-432
 473-IleAlaSerLeuGluLys-478
 525-ValAlaLeuCysGlyAsnMetMetLysMetProGlyLeuProLysValProAlaAla-543

Antigenic Index - Jameson-Wolf

3-PheLysThrAspAlaGluIleAlaGlnSerSerThrMetArgProIleGly-19
 27-LeuAsnValAspAsnIleGluProTyrGly-36
 38-TyrLysAlaLysIleAsnProAlaGluAlaPheLysLeuProGlnLysGlnGlyArg-56
 64-AsnProThrProAlaGlyGluGlyLysThrThr-74
 81-AspAlaLeuArgHisIleGlyLysAspSerValIleAlaLeuArgGluProSerLeuGlyPro-101
 105-ValLysGlyGlyAlaAlaGlyGlyGly-113
 151-GlnGlyAsnGluLeuAsnIleAspProLysArgValLeuTrp-164
 166-ArgValValAspMetAsnAspArgGlnLeuArgAsnIleIleAspGlyMetGlyLysProValAspGlyValMetArgProAspGlyPheAspIle-197
 211-LysAspIleSerAspLeuLysGluArgLeuGly-221
 227-TyrAlaLysAspGlySerProValTyr-235
 237-LysAspLeuLysAlaAsnGly-243
 251-AspAlaIleLysProAsnLeu-257
 287-ArgLeuAlaLysHisLeuAla-293
 306-LeuGlyAlaGluLysPheCysAspIleLysCysArgLeuAlaGlyLeuLysProAspAla-325

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335-LeuLysTyrAsnGlyGlyValGluArgAlaAsnLeuGlyGluGluAsnLeuAspAlaLeuGluLysGlyLeu
ProAsnLeu-361

383-PheValSerAspSerAspAlaGluLeuAlaMetIleGluLysAlaCysAla-399

411-TrpGlyLysGlyGlyAlaGlyGlyAlaAspLeuAlaArgLysValValAsn-427

429-IleGluSerGlnThrAsnAsnPheGly-437

444-LeuGlyIleLysAspLysIleArgAlaIleAla-454

458-TyrGlyAlaGluAspValAspPheSerAla-467

474-AlaSerLeuGluLysLeuGlyLeuAspLysMetPro-485

494-SerLeuSerAspAsnAlaLysLeu-501

503-GlyCysProGluAspPheArgIle-510

534-MetProGlyLeuPro-538

541-ProAlaAlaGluLysIleAspValAspAlaGluGly-552

Hydrophilic Regions - Hopp-Woods

3-PheLysThrAspAlaGluIleAlaGln-11

38-TyrLysAlaLysIleAsnPro-44

46-GluAlaPheLysLeuProGlnLysGlnGlyArg-56

67-ProAlaGlyGluGlyLysThr-73

81-AspAlaLeuArgHisIleGlyLysAspSerValIleAlaLeuArgGluProSer-98

155-LeuAsnIleAspProLysArgValLeuTrp-164

166-ArgValValAspMetAsnAspArgGlnLeuArgAsnIleIle-179

181-GlyMetGlyLysProValAspGlyValMetArgProAspGlyPhe-195

211-LysAspIleSerAspLeuLysGluArgLeuGly-221

228-AlaLysAspGlySer-232

237-LysAspLeuLysAla-241

287-ArgLeuAlaLysHisLeuAla-293

306-LeuGlyAlaGluLysPheCysAspIleLysCysArgLeuAlaGlyLeuLysProAspAla-325

339-GlyGlyValGluArgAlaAsnLeuGlyGluGluAsnLeuAspAlaLeuGluLysGlyLeu-358

383-PheValSerAspSerAspAlaGluLeuAlaMetIleGluLysAlaCysAla-399

420-AspLeuAlaArgLysValValAsn-427

444-LeuGlyIleLysAspLysIleArgAlaIleAla-454

458-TyrGlyAlaGluAspValAspPheSerAla-467

474-AlaSerLeuGluLysLeuGlyLeuAspLysMetPro-485

503-GlyCysProGluAspPheArgIle-510

541-ProAlaAlaGluLysIleAspValAspAlaGluGly-552

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AMPHI Regions - AMPHI

26-ArgPheAlaAlaMetProAspValValGlyLys-36

44-GlyGlnProGlyLysMetPhe-50

100-AlaValThrProCysArg-105

107-ValCysArgAspAspMetAsn-113

118-GlyCysHisArgIleThrGluArgSerLeuLysSerPheLeuGlnIleArgHisPheSerProLeu-139

174-LeuArgValGlnArgIleLeuAspPheGlyLysPheCysGlnGlnVal-189

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202-LeuAspSerValValThrLeuValHisPhePheAlaAspPheLeuIle-217
 239-AlaAspAsnGlnThrArgPhePheLysAlaGly-249
 259-AsnAlaArgLeuIleArgGlnIleLeuLys-268

Antigenic Index - Jameson-Wolf

31-ProAspValValGly-35
 38-LeuPheGlyArgGlnAlaGlyGlnProGlyLysMet-49
 59-GlnArgIleAspAlaGluAlaAlaValPheArgGlnAspArgAsnAspSerArgThrProValAspAlaGlnHisHisGlyArgArgLeuValArgAsnArgArgAsnArgArgHisCysAsnAla-100
 102-ThrProCysArgThrValCysArgAspAspMetAsnAlaCysArgThrGlyCysHisArgIleThrGluArgSerLeuLys-128
 147-AlaAlaHisLysAla-151
 153-ProMetCysSerSerSerAspSerLysSerArgArgSerAspIleSerAlaArgTyr-171
 180-LeuAspPheGlyLysPheCys-186
 225-GlnLeuGlnLysAsnThrSer-231
 237-PheGlnAlaAspAsnGlnThrArgPhePheLysAlaGlyGlnAspThrGlyGlnAlaGlyAlaGlnAsn-259
 267-LeuLysValGlnArgAlaValPheArgGlnLysThrAspAsnProPro-282
 291-IleGlnAsnArgProGluLeuGlyHisGlnGly-301
 307-GlnThrAspIleAspArgArgMetPhe-315

Hydrophilic Regions - Hopp-Woods

42-GlnAlaGlyGlnPro-46
 59-GlnArgIleAspAlaGluAlaAlaValPheArgGlnAspArgAsnAspSerArgThrProValAspAlaGlnHisHisGlyArgArgLeuValArgAsnArgArgAsnArgArgHisCys-98
 106-ThrValCysArgAspAspMetAsnAlaCysArg-116
 121-ArgIleThrGluArgSerLeuLys-128
 147-AlaAlaHisLysAla-151
 156-SerSerSerAspSerLysSerArgArgSerAspIleSerAla-169
 237-PheGlnAlaAspAsnGlnThrArgPhePheLysAlaGlyGlnAspThrGlyGln-254
 267-LeuLysValGlnArgAlaValPheArgGlnLysThrAspAsn-280
 291-IleGlnAsnArgProGluLeuGly-298
 309-AspIleAspArgArgMetPhe-315

a144**AMPHI Regions - AMPHI**

36-LeuGlyGlyIleValGlnGluPhe-43
 45-ValLeuAlaAspGlyValArg-51
 71-IleAsnLysGlnIleGlyArgValAlaGlyArg-81
 136-ValGlyArgArgLeu-140
 159-TyrArgTyrLeuSerArgHis-165
 185-GlyProAlaArgCysGlySerAlaTyrSerAlaGly-196
 200-SerGlyArgCysArgLysThrAlaArgLeuAsnGlyPheArgArgProArgSer-217

Antigenic Index - Jameson-Wolf

1-MetSerAspThrProAlaThrArgAspPheGlyLeuIleAspGlyArgAla-17
 23-LeuSerAsnArgArgGlyThrArg-30
 48-AspGlyValArgGlu-52
 58-PheAspAspAlaAlaSerTyrAlaAspAsnProPheGlnIleAsn-72
 78-ValAlaGlyArgIleArgGlyAlaAla-86
 88-AspIleAsnGlyArgThrTyrArgValGluAlaAsnGluGlyArgAsnAlaLeuHisGlyGlySerHis-110
 121-AlaAlaAspGlyArgSerValValLeu-129
 135-ThrValGlyArgArgLeuSerGlnArgPheGly-145
 151-ProLeuGlyArgGlyArgProAlaTyr-159
 161-TyrLeuSerArgHisArgAlaArgArgHisGlyValArgProAspAlaAlaHis-178
 182-AlaGlyArgGlyProAlaArgCysGlySer-191

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194-SerAlaGlyArgThrTyrSerGlyArgCysArgLysThrAlaArgLeuAsnGlyPheArgArgProArgSer
Ile-218

Hydrophilic Regions - Hopp-Woods

1-MetSerAspThrProAlaThrArgAsp-9
24-SerAsnArgArgGlyThrArg-30
48-AspGlyValArgGlu-52
58-PheAspAspAlaAlaSer-63
78-ValAlaGlyArgIleArgGlyAlaAla-86
89-IleAsnGlyArgThrTyrArgValGluAlaAsnGluGlyArgAsnAlaLeu-105
121-AlaAlaAspGlyArgSerValValLeu-129
135-ThrValGlyArgArgLeuSerGln-142
153-GlyArgGlyArgProAla-158
163-SerArgHisArgAlaArgArgHisGlyValArgProAspAla-176
183-GlyArgGlyProAlaArgCys-189
197-ArgThrTyrSerGlyArgCysArgLysThrAlaArg-208
210-AsnGlyPheArgArgProArgSerIle-218

a146**AMPHI Regions - AMPHI**

19-GluGlnTyrGlyLeuPheAspPheMetProCys-29
34-ProLeuAspAsnPheProThrVal-41
64-GlyPheGlyGlnArgIleSerAsnLeuSerArg-74
95-LeuArgAlaCysAla-99
105-HisValArgValPheGlnLys-111
140-ThrArgArgValArg-144
158-ArgHisGlnArgGlyPheAlaArg-165

Antigenic Index - Jameson-Wolf

6-LeuArgProArgGlnValIleIleAspHisAspLysIleGluGln-20
29-CysLeuArgGlnProProLeuAspAsn-37
41-ValArgProAlaSerValGluThrArgSerLysHisIleGluArgArgGlnAspLysAspAlaAspGlyP
heGlyGlnArgIleSerAsnLeuSer-73
86-ThrCysArgArgGlnArgIleHisThr-94
112-SerLeuLeuArgAspLysArgLeuLys-120
138-ArgArgThrArgArgValArgHisGlyAsnAlaGln-149
155-GlnGlnProArgHisGlnArgGlyPheAla-164
166-AlaGlySerGlyArgAsnAspLysAspValAlaPheSerIle-179
195-GlnArgThrProGlyPhe-200

Hydrophilic Regions - Hopp-Woods

6-LeuArgProArgGlnValIleIleAspHisAspLysIleGluGln-20
44-AlaSerValGluThrArgSerLysHisIleGluArgArgGlnAspLysAspAlaAspGlyPheGly-66
86-ThrCysArgArgGlnArgIleHisThr-94
112-SerLeuLeuArgAspLysArgLeuLys-120
138-ArgArgThrArgArgValArgHisGlyAsn-147
156-GlnProArgHisGlnArgGlyPheAla-164
167-GlySerGlyArgAsnAspLysAspValAla-176

a148**AMPHI Regions - AMPHI**

25-AlaAspLysIleArgLysIleGluAsnTrpPro-35
49-GlnSerAlaGluTyrPheArgLeuLeuValAspLeu-60
150-AlaGlyLeuGluLeuIleArgLysLeuGlyGlyGluIle-162
165-AlaAlaAlaIleLeuGluPheThrAspLeuGlnGlyGlyLysAsnIleArg-181

Antigenic Index - Jameson-Wolf

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4-LysThrSerAsnLeu-8
 24-LeuAlaAspLysIleArgLysIleGluAsnTrpProGlnLysGly-38
 66-MetAspGlnLysIleAspIle-72
 76-LeuAspAlaArgGly-80
 97-ProIleArgLysLysGlyLysLeuPro-105
 117-TyrGlyGluAlaAlaVal-122
 124-IleHisThrAspAlaValLysLeuGlySer-133
 153-GluLeuIleArgLysLeuGlyGlyGluIleValGlu-164
 172-ThrAspLeuGlnGlyGlyLysAsnIleArgAlaSerGlyAlaPro-186
 192-GlnAsnGluGlyCysMetLysGly-199

Hydrophilic Regions - Hopp-Woods

24-LeuAlaAspLysIleArgLysIleGluAsnTrpPro-35
 66-MetAspGlnLysIleAspIle-72
 97-ProIleArgLysLysGlyLysLeuPro-105
 117-TyrGlyGluAlaAlaVal-122
 124-IleHisThrAspAlaValLysLeuGlySer-133
 153-GluLeuIleArgLysLeuGlyGlyGluIleValGlu-164
 178-LysAsnIleArgAlaSerGly-184
 195-GlyCysMetLysGly-199

a149**AMPHI Regions - AMPHI**

72-AsnLeuGlyAspAlaLeuAspGlyValProGlyIle-83
 101-ThrGlyArgArgIleLysValLeuAsnHisHisGlyGluThrGlyAspMet-117
 135-GlnValGluIleLeuArgGlyProValThr-144
 152-ValAlaGlyLeuValAsp-157
 164-ProGluLysMetProGluAsnGlyVal-172
 184-AsnLeuGluLysLeu-188
 220-TyrArgAsnLeuLysArgLeuProAspSerHis-230
 345-PheProGlyPheGlu-349
 366-AlaGlyAspAlaValGluAsnPhePheAsnAsn-376
 389-ProIleGlyArgLeuLys-394
 411-AlaThrSerGluAla-415
 565-ArgPheGlyAsnTyrIleTyrAlaGln-573
 576-AsnAspGlyArgGlyProLysSerIleGluAsp-586
 627-ArgGlyArgLeuLysAsnLeuProSer-635

Antigenic Index - Jameson-Wolf

23-GlnAlaHisGlyThrGluGlnSerVal-31
 40-GlyLysSerArgProArgAlaThrSerGly-49
 55-ThrAlaSerAspLysIleIleSerGlyAspThrLeuArgGlnLysAla-70
 97-IleArgGlyGlnThrGlyArgArgIleLysVal-107
 109-AsnHisHisGlyGluThrGlyAspMetAlaAspPheSerProAspHis-124
 137-GluIleLeuArgGlyPro-142
 157-AspValAlaAspGlyLysIleProGluLysMetProGluAsnGlyValSerGlyGluLeuGlyLeu-178
 180-LeuSerSerGlyAsnLeuGluLysLeuThrSerGlyGly-192
 207-GlyLeuTyrArgLysSerGlyAspTyrAlaValProArgTyrArgAsnLeuLysArgLeuProAspSerHis
 AlaAspSerGlnThrGly-236
 244-GlyGluLysGlyPhe-248
 252-AlaTyrSerAspArgArgAspGlnTyrGly-261
 263-ProAlaHisSerHisGluTyrAspAspCysHisAla-274
 281-SerLeuIleAsnLysArgTyrLeu-288
 295-LeuThrGluGluAspIleAspTyrAspAsnProGlyLeu-307
 310-GlyPheHisAspAspAspAlaHis-318

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321-AlaHisAsnGlyLysProTrpIleAspLeuArgAsnLysArgTyrGluLeuArgAlaGluTrpLysGlnPro
PheProGly-347
354-HisLeuAsnArgAsnAspTyrArgHisAspGluLysAlaGlyAspAlaVal-370
374-PheAsnAsnGlnThrGlnAsnAlaArgIleGluLeuArgHisGlnProIleGlyArgLeuLysGlySerTrp
-397
402-LeuGlyGlnLysSerSerAlaLeu-409
411-AlaThrSerGluAlaValLys-417
422-LeuAspAsnLysVal-426
437-AlaAsnTrpAspAsnPheThrLeuGluGlyGlyValArgValGluLysGlnLysAlaSerIleArgTyrAsp
LysAlaLeuIleAspArgGluAsnTyrTyrAsnHisProLeuProAsp-476
478-GlyAlaHisArgGlnThrAla-484
506-SerHisGlnGluArgLeuProSerThrGlnGluLeuTyrAlaHisGly-521
531-ValGlyAsnLysHisLeuAsnLysGluArgSerAsnAsnIle-544
550-TyrGluGlyAspArgTrpGln-556
562-TyrArgAsnArgPheGlyAsn-568
574-ThrLeuAsnAspGlyArgGlyProLysSerIleGluAspAspSerGluMetLysLeu-592
594-ArgTyrAsnGlnSerGlyAlaAspPheTyrGlyAlaGluGly-607
609-IleTyrPheLysProThrProArgTyrArgIle-619
621-ValSerGlyAspTyrValArgGlyArgLeuLysAsnLeuProSerLeuProGlyArgGluAspAlaTyrGly
AsnArg-646
651-GlnAlaAspGlnAsnAlaProArgValProAla-661
671-SerLeuThrAspArgIleAspAla-678
689-AsnLysLeuAlaArgTyrGluThrArgThrProGlyHis-701
707-GlyAlaAsnTyrArgArgAsnThrArgTyrGlyGluTrp-719
725-AlaAspAsnLeuLeu-729
739-PheLeuSerAspThrProGlnMetGlyArgSerPheThrGlyGlyVal-754

Hydrophilic Regions - Hopp-Woods

25-HisGlyThrGluGln-29
40-GlyLysSerArgProArgAlaThr-47
55-ThrAlaSerAspLysIleIleSer-62
64-AspThrLeuArgGlnLysAla-70
100-GlnThrGlyArgArgIleLysVal-107
112-GlyGluThrGlyAspMetAlaAspPheSerPro-122
157-AspValAlaAspGlyLysIleProGluLysMetProGluAsnGlyValSer-173
181-SerSerGlyAsnLeuGluLysLeuThr-189
207-GlyLeuTyrArgLysSerGlyAsp-214
219-ArgTyrArgAsnLeuLysArgLeuProAspSerHisAlaAspSerGlnThr-235
253-TyrSerAspArgArgAspGlnTyr-260
267-HisGluTyrAspAspCysHisAla-274
295-LeuThrGluGluAspIleAspTyrAspAsn-304
311-PheHisAspAspAspAlaHis-318
330-LeuArgAsnLysArgTyrGluLeuArgAlaGluTrp-341
354-HisLeuAsnArgAsnAspTyrArgHisAspGluLysAlaGlyAspAlaVal-370
378-ThrGlnAsnAlaArgIleGluLeuArgHis-387
391-GlyArgLeuLysGly-395
411-AlaThrSerGluAlaValLys-417
446-GlyGlyValArgValGluLysGlnLysAlaSerIleArgTyrAspLysAlaLeuIleAspArgGluAsnTyr
-469
478-GlyAlaHisArgGlnThrAla-484
506-SerHisGlnGluArgLeuProSer-513
535-HisLeuAsnLysGluArgSerAsnAsn-543
550-TyrGluGlyAspArgTrp-555
575-LeuAsnAspGlyArgGlyProLysSerIleGluAspAspSerGluMetLysLeu-592
603-TyrGlyAlaGluGly-607

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613-ProThrProArgTyrArgIle-619
 624-AspTyrValArgGlyArgLeuLysAsn-632
 637-ProGlyArgGluAspAlaTyrGly-644
 652-AlaAspGlnAsnAlaProArgValProAla-661
 671-SerLeuThrAspArgIleAspAla-678
 690-LysLeuAlaArgTyrGluThrArgThrProGly-700
 709-AsnTyrArgArgAsnThrArgTyrGly-717
a150

AMPHI Regions - AMPHI

1-MetGlnAsnThrAsnProProLeuProProMetProProGluIleThrGlnLeuLeuSerGlyLeuAspAlaAlaGlnTrpAlaTrpLeuSerGlyTyrAlaTrpAlaLysAlaGlyAsnGlyAlaSerAlaGlyLeuProAlaLeuGlnThrAlaLeuProThrAlaGluProPheSerValThrValLeuSerAlaSerGlnThrGlyAsnAlaLysSerValAlaAspLysAlaAlaAspSerLeuGluAlaAlaGlyIleGlnValSerArgAlaGluLeuLysAspTyrLysAlaLysAsnIleAlaGlyGluArgArgLeuLeuValThrSerThrGlnGlyGluGlyGluProProGluGluAlaValLeuLeuHisLysLeuLeuAsnGlyLysLysAlaProLysLeuAspLysLeuGlnPheAlaValLeuGlyLeuGlyAspSerSerTyrProAsnPheCysArgAlaGlyLysAspPheAspLysArgPheGluGluLeuGlyAlaLysArgLeuLeuGluArgValAspAlaAspLeuAspPheAlaAlaAlaAlaAspGlyTrpThrAspAsnIleAlaAlaLeuLeuLysGluGluAlaAlaLysAsnArgAlaThrProAlaProGlnThrThrProAlaGlyLeuGlnThrAlaProAspGlyArgTyrCysLysAlaAspProPheProAlaAlaLeuLeuAlaAsnGlnLysIleThrAlaArgGlnSerAspLysAspValArgHisIleGluIleAspLeuSerGlySerAspLeuHisTyrLeuProGlyAspAlaLeuGlyValTrpPheAspAsnAspProAlaLeuValArgGluIleLeuAspLeuLeuGlyIleAspGlnAlaThrGluIleGlnAlaGlyGlyLysThrLeuProValAlaSerAlaLeuLeuSerHisPheGluLeuThrGlnAsnThrProAlaPheValLysGlyTyrAlaProPheAlaAspAspAspGluLeuAspArgIleAlaAlaAspAsnAlaValLeuGlnGlyPheValGlnSerThrProIleAlaAspValLeuHisArgPheProAlaLysLeuThrAlaGluGlnPheAlaGlyLeuLeuArgProLeuAlaProArgLeuTyrSerIleSerSerSerGlnAlaGluValGlyAspGluValHisLeuThrValGlyAlaValArgPheGluHisGluGlyArgAlaArgAlaGlyGlyAlaSerGlyPheLeuAlaAspArgLeuGluGluAspGlyThrValArgValPheValGluArgAsnAspGlyPheArgLeuProGluAspSerArgLysProIleValMetIleGlySerGlyThrGlyValAlaProPheArgAlaPheValGlnGlnArgAlaAlaGluAsnAlaGluGlyLysAsnTrpLeuPhePheGlyAsnProHisPheAlaArgAspPheLeuTyrGlnThrGluTrpGlnGlnPheAlaLysAspGlyPheLeuHisArgTyrAspPheAlaTrpSerArgAspGlnGluGlyLysIleTyrValGlnAlaLysIleArgGluGlnAlaGluGlyLeuTrpGlnTrpLeuGlnGluGlyAlaHisIleTyrValCysGlyAspAlaAlaLysMetAlaLysAspValGluAlaAlaLeuLeuAspValIleIleGlyAlaGlyHisLeuAspGluGluGlyAlaGluGluTyrLeuAspMetLeuArgGluGluLysArgTyrGlnArgAspValTyr-599

Antigenic Index - Jameson-Wolf

1-MetGlnAsnThrAsnProProLeuProProMetProProGluIleThrGlnLeuLeuSerGlyLeuAspAlaAlaGlnTrpAlaTrpLeuSerGlyTyrAlaTrpAlaLysAlaGlyAsnGlyAlaSerAlaGlyLeuProAlaLeuGlnThrAlaLeuProThrAlaGluProPheSerValThrValLeuSerAlaSerGlnThrGlyAsnAlaLysSerValAlaAspLysAlaAlaAspSerLeuGluAlaAlaGlyIleGlnValSerArgAlaGluLeuLysAspTyrLysAlaLysAsnIleAlaGlyGluArgArgLeuLeuValThrSerThrGlnGlyGluGlyGluProProGluGluAlaValLeuLeuHisLysLeuLeuAsnGlyLysLysAlaProLysLeuAspLysLeuGlnPheAlaValLeuGlyLeuGlyAspSerSerTyrProAsnPheCysArgAlaGlyLysAspPheAspLysArgPheGluGluLeuGlyAlaLysArgLeuLeuGluArgValAspAlaAspLeuAspPheAlaAlaAlaAspGlyTrpThrAspAsnIleAlaAlaLeuLeuLysGluGluAlaAlaLysAsnArgAlaThrProAlaProGlnThrThrProProAlaGlyLeuGlnThrAlaProAspGlyArgTyrCysLysAlaAspProPheProAlaAlaLeuLeuAlaAsnGlnLysIleThrAlaArgGlnSerAspLysAspValArgHisIleGluIleAspLeuSerGlySerAspLeuHisTyrLeuProGlyAspAlaLeuGlyValTrpPheAspAsnAspProAlaLeuValArgGluIleLeuAspLeuLeuGlyIleAspGlnAlaThrGluIleGlnAlaGlyGlyLysThrLeuProValAlaSerAlaLeuLeuSerHisPheGluLeuThrGlnAsnThrProAlaPheValGlnSerThrProIleAlaAspValLeuHisArgPheProAlaLysLeuThrAlaGluGlnPheAlaGlyLeuLeuArgProLeuAlaProArgLeuTyrSerIleSerSerSerGlnAlaGluValGlyAspGluValHisLeuThrValGlyAlaValArgPheGluHisGluGlyArgAlaArgAlaGlyGlyAlaSerGlyPheLeuAlaAspArgLeuGluGluAspGlyThrValArgValPheValGluArgAsnAspGlyPheArgLeuProGluAspSerArgLysProIleValMetIleGlySerGlyThrGlyValAlaProPheArgAlaPheValGlnGlnArgAlaAlaGluAsnAlaGluGlyLysAsnTrpLeuPhePheGlyAsnProHisPheAlaArgAspPheLeuTyrGlnThrGluTrpGlnGlnPheAla

LysAspGlyPheLeuHisArgTyrAspPheAlaTrpSerArgAspGlnGluGluLysIleTyrValGlnAspLysIleArgGluGlnAlaGluGlyLeuTrpGlnTrpLeuGlnGluGlyAlaHisIleTyrValCysGlyAspAlaAlaLysMetAlaLysAspValGluAlaAlaLeuLeuAspValIleIleGlyAlaGlyHisLeuAspGluGluGlyAlaGluGluTyrLeuAspMetLeuArgGluGluLysArgTyrGlnArgAspValTyr-599

Hydrophilic Regions - Hopp-Woods

1-MetGlnAsnThrAsnProProLeuProProMetProProGluIleThrGlnLeuLeuSerGlyLeuAspAlaAlaGlnTrpAlaTrpLeuSerGlyTyrAlaTrpAlaLysAlaGlyAsnGlyAlaSerAlaGlyLeuProAlaLeuGlnThrAlaLeuProThrAlaGluProPheSerValThrValLeuSerAlaSerGlnThrGlyAsnAlaLysSerValAlaAspLysAlaAlaAspSerLeuGluAlaAlaGlyIleGlnValSerArgAlaGluLeuLysAspTyrLysAlaLysAsnIleAlaGlyGluArgArgLeuLeuValThrSerThrGlnGlyGluGlyGluProProGluGlnAlaValValLeuHisLysLeuLeuAsnGlyLysLysAlaProLysLeuAspLysLeuGlnPheAlaValLeuGlyLeuGlyAspSerSerTyrProAsnPheCysArgAlaGlyLysAspPheAspLysArgPheGlyAlaLysArgLeuLeuGluArgValAspAlaAspLeuAspPheAlaAlaAlaAspGlyTrpThrAspAsnIleAlaAlaLeuLeuLysGluGluAlaAlaLysAsnArgAlaThrProAlaProGlnThrThrProProAlaGlyLeuGlnThrAlaProAspGlyArgTyrCysLysAlaAspProPheProAlaAlaLeuLeuAlaAsnGlnLysIleThrAlaArgGlnSerAspLysAspValArgHisIleGluIleAspLeuSerGlySerAspLeuHisTyrLeuProGlyAspAlaLeuGlyValTrpPheAspAsnAspProAlaLeuValArgGluIleLeuAspLeuLeuGlyIleAspGlnAlaThrGluIleGlnAlaGlyGlyLysThrLeuProValAlaSerAlaLeuLeuSerHisPheGluLeuThrGlnAsnThrProAlaPheValLysGlyTyrAlaProPheAlaAspAspAspGluLeuAspArgIleAlaAlaAspAsnAlaValLeuGlnGlyPheValGlnSerThrProIleAlaAspValLeuHisArgPheProAlaLysLeuThrAlaGluGlnPheAlaGlyLeuLeuArgProLeuAlaProArgLeuTyrSerIleSerSerSerGlnAlaGluValGlyAspGluValHisLeuThrValGlyAlaGluValArgPheGluHisGluGlyArgAlaArgAlaGlyGlyAlaSerGlyPheLeuAlaAspArgLeuGluGluAspGlyThrValArgValPheValGluArgAsnAspGlyPheArgLeuProGluAspSerArgLysProIleValMetIleGlySerGlyThrGlyValAlaProPheArgAlaPheValGlnGlnArgAlaAlaGluAsnAlaGluGlyLysAsnTrpLeuPheGlyAsnProHisPheAlaArgAspPheLeuTyrGlnThrGluTrpGlnGlnPheAlaLysAspGlyPheLeuHisArgTyrAspPheAlaTrpSerArgAspGlnGluGluLysIleTyrValGlnAspLysIleArgGlnAlaGluGlyLeuTrpGlnTrpLeuGlnGlyAlaHisIleTyrValCysGlyAspAlaLysLysMetAlaLysAspValGluAlaAlaLeuLeuAspValIleIleGlyAlaGlyHisLeuAspGluGluGlyAlaGluGluTyrLeuAspMetLeuArgGluGluLysArgTyrGlnArgAspValTyr-599

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AMPHI Regions - AMPHI

6-AsnIleAlaIleIleAla-11
22-AspGlnLeuLeuArg-26
72-ValAspThrProGlyHis-77
81-GlyGlyGluValGluArgValLeuGlyMetValAspCysVal-94
128-LysIleAspLysPro-132
144-PheGluLeuPheAspAsnLeuGlyAlaThr-153
165-SerGlyLeuSerGlyPheAlaLysLeuGluGluThrAspGluSerAsn-180
184-ProLeuPheAspThrIleLeuLysTyrThr-193
248-GlyArgIleAsnGlnLeuLeuGlyPheLysGlyLeuGluArgVal-262
273-ValIleIleSerGlyIleGlu-279
330-IleArgAspArgLeuGlnLysGluLeu-338
348-AspThrAlaAspAla-352
396-CysGluProTyrGluAsnLeuThrValAsp-405
457-LeuThrArgGlyValGly-462
464-MetSerHisValPheAsp-469
537-LysGlyLysLysLeuThrAsnIle-544
551-GluAlaValArgLeuThrThr-557

Antigenic Index - Jameson-Wolf

1-MetLysGlnIleArg-5
13-ValAspHisGlyLysThrThrLeu-20
24-LeuLeuArgGlnSerGlyThrPheArgAlaAsnGlnGlnValAspGluArgValMetAspSerAsnAspLeuGluLysGluArgGlyIle-53

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59-AsnThrAlaIleAspTyrGluGlyTyr-67
 72-ValAspThrProGlyHisAlaAspPheGlyGlyGluValGluArg-86
 99-AspAlaGlnGluGlyProMetProGlnThrArgPheValThr-112
 128-LysIleAspLysProSerAlaArgProSerTrp-138
 151-GlyAlaThrAspGluGlnLeuAsp-158
 171-AlaLysLeuGluGluThrAspGluSerAsnAspMetArgProLeu-185
 193-ThrProAlaProSerGlySerAlaAspGluThrLeu-204
 211-LeuAspTyrAspAsnTyrThrGly-218
 226-LeuAsnGlyArgIleLysProGlyGln-234
 240-AsnHisAspGlnGlnIleAla-246
 257-LysGlyLeuGluArgValProLeuGluGluAlaGluAlaGlyAsp-271
 277-GlyIleGluAspIleGly-282
 287-IleThrAspLysAspAsnProLysGlyLeuPro-297
 300-SerValAspGluProThrLeu-306
 314-ThrSerProLeuAlaGlyThrGluGlyLysPheValThrSerArgGlnIleArgAspArgLeuGlnLysGlu
 LeuLeu-339
 344-LeuArgValGluAspThrAlaAspAlaAspValPheArgValSerGlyArgGlyGluLeu-363
 371-AsnMetArgArgGluGlyTyr-377
 381-ValGlyLysProArgValValTyrArgAspIleAspGlyGlnLysCysGluProTyrGluAsnLeuThrVal
 AspValProAspAspAsnGlnGlyAlaValMetGluGluLeuGlyArgArgArgGlyGluLeuThrAsnMetGluS
 erAspGlyAsnGlyArgThrArgLeuGluTyr-440
 467-ValPheAspAspTyrAlaProValLysProAspMetProGlyArgHisAsnGly-484
 489-GlnGluGlnGlyGlu-493
 501-AsnLeuGluAspArgGlyArgMetPheValSerProAsnAspLysIleTyr-517
 524-IleHisSerArgAspAsnAspLeu-531
 535-ProLeuLysGlyLysLysLeuThrAsnIleArgAlaSerGlyThrAspGluAlaValArg-554
 569-PheIleAspAspAspGluLeuValGlu-577
 579-ThrProGlnSerIleArgLeuArgLysArgTyrLeuSerGluLeuGluArgArgArgHisPheLysLysLeu
 Asp-603

Hydrophilic Regions - Hopp-Woods

1-MetLysGlnIleArg-5
 29-GlyThrPheArgAla-33
 35-GlnGlnValAspGluArgValMetAspSerAsnAspLeuGluLysGluArgGlyIle-53
 80-PheGlyGlyGluValGluArg-86
 99-AspAlaGlnGluGlyProMetPro-106
 128-LysIleAspLysProSerAla-134
 151-GlyAlaThrAspGluGlnLeuAsp-158
 171-AlaLysLeuGluGluThrAspGluSerAsnAspMetArgProLeu-185
 198-GlySerAlaAspGluThrLeu-204
 226-LeuAsnGlyArgIleLysPro-232
 241-HisAspGlnGlnIleAla-246
 258-GlyLeuGluArgValProLeuGluGluAlaGluAlaGlyAsp-271
 277-GlyIleGluAspIleGly-282
 287-IleThrAspLysAspAsnProLysGly-295
 300-SerValAspGluProThrLeu-306
 318-AlaGlyThrGluGlyLysPheValThr-326
 328-ArgGlnIleArgAspArgLeuGlnLysGluLeuLeu-339
 344-LeuArgValGluAspThrAlaAspAlaAspValPheArgValSerGlyArgGlyGluLeu-363
 371-AsnMetArgArgGluGlyTyr-377
 381-ValGlyLysProArgValValTyrArgAspIleAspGlyGlnLysCysGluProTyrGlu-400
 405-AspValProAspAspAsnGlnGlyAlaValMetGluGluLeuGlyArgArgArgGlyGluLeuThrAsnMet
 GluSerAspGlyAsnGlyArgThrArgLeu-438
 472-AlaProValLysProAspMetProGlyArgHis-482
 489-GlnGluGlnGlyGlu-493

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502-LeuGluAspArgGlyArgMet-508
 512-ProAsnAspLysIleTyr-517
 525-HisSerArgAspAsnAspLeu-531
 536-LeuLysGlyLysLysLeuThrAsn-543
 545-ArgAlaSerGlyThrAspGluAlaValArg-554
 569-PheIleAspAspAspGluLeuValGlu-577
 583-IleArgLeuArgLysArgTyrLeuSerGluLeuGluArgArgHisPheLysLysLeuAsp-603
a152

AMPHI Regions - AMPHI

10-PheProThrArgLeuPhe-15
 66-ArgPheSerArgPheValArgGlyTrpSerGlyIleArgGluTyrMetLysAsnGlyIleProGluHisValGlnProGlyHisAsnProLeu-96
 103-AlaLeuLeuAlaAla-107
 130-LeuAsnHisLeuValSerGluHisThrGlySerLeu-141
 150-PheLysLeuLeuAlaValPheSerAlaValHisIleAlaXxxValAlaAlaTyr-167

Antigenic Index - Jameson-Wolf

1-MetLysAsnLysThrLysValTrp-8
 28-TyrSerAlaLysThrGlyGlyAsp-35
 61-GlySerAspThrAlaArgPhe-67
 74-TrpSerGlyIleArgGluTyrMetLysAsnGlyIleProGluHisValGlnProGlyHisAsnProLeu-96
 125-SerThrAsnGlyTyr-129
 137-HisThrGlySerLeuMetArg-143
 169-ValPheLysLysLysAsnLeu-175
 186-IleGluGlyLysThrSerIle-192

Hydrophilic Regions - Hopp-Woods

1-MetLysAsnLysThrLysVal-7
 63-AspThrAlaArgPhe-67
 78-ArgGluTyrMetLys-82
 169-ValPheLysLysLysAsnLeu-175
 186-IleGluGlyLysThrSerIle-192

a153**AMPHI Regions - AMPHI**

17-AlaAlaSerValLeuSerLeuProGluMetMetArgLeuMetValPhe-32
 96-ThrLeuValAlaTyrIleLysLeuSerSerValAlaGlu-108
 130-ValSerValProGlnHisTrp-136
 222-ValAsnThrIleLeuAsnGlyIleAlaTyr-231
 274-AlaLysLysLeuSerHisLeuTyrArgIleThrGluAlaValGlyArgTrpSerMetIleAspIlePheValIle-298

Antigenic Index - Jameson-Wolf

65-IleArgLysGlnAla-69
 81-ValArgLeuArgGln-85
 107-AlaGluValArgPhe-111
 143-ArgLeuThrGlyAspAsnAlaValGlnThrAlaSerGluGlyLysThrCysCysSer-161
 165-TyrPheArgAspSerAlaGluSerProCysGly-175
 180-GluLeuTyrArgArgArgProLysSerLeuSer-190
 215-SerAsnProAlaAlaThr-220
 234-AspGluGlyAspArgLeu-239
 272-ThrGlyAlaLysLysLeu-277
 339-LeuLeuTrpAspLysArgAlaSerAspGlyIleAla-350
 352-AsnGluThrGluLysHisAsp-358

Hydrophilic Regions - Hopp-Woods

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81-ValArgLeuArgGln-85
 107-AlaGluValArgPhe-111
 152-ThrAlaSerGluGlyLysThrCysCys-160
 168-AspSerAlaGluSerPro-173
 180-GluLeuTyrArgArgArgProLysSerLeuSer-190
 234-AspGluGlyAspArgLeu-239
 273-GlyAlaLysLysLeu-277
 339-LeuLeuTrpAspLysArgAlaSerAsp-347
 352-AsnGluThrGluLysHisAsp-358

a154**AMPHI Regions - AMPHI**

122-GlyValThrGlyLeuGlyThrLeuLeu-130
 152-GlnAspIleProProValThr-158
 262-ThrLysAsnSerLysAsnValLysSer-270
 298-PheLysGlnSerVal-302
 360-SerLysGluHisTrpLysGlnGlnPheGlnThrAlaLeuAsnLysGlyLeuThrAla-378
 389-SerLysMetIleGluLeuAsnAsp-396
 429-LysLeuAlaAspLeuLeuAspLysPheAspLysLeuPro-441
 446-ValAlaGluLeuAsnGly-451
 467-LeuSerSerIleAspLysLeuValGlyLysProGlnThrGlnAsnIleProAsnGluLeuAsnGlnThrLeu
 LysGluLeuArgThrThr-496
 506-IleTyrGlyAspValGlnAsnThrLeuGlnSerLeuAspLysThrLeuLysAspValGlnProValIleAsn
 ThrLeuLysGluLys-534

Antigenic Index - Jameson-Wolf

1-MetThrAspAsnSerProProProAsnGlyHisAlaGlnAlaArgValArgLysAsnAsnThr-21
 43-LysGluIleArgAsnArgGlyProVal-51
 57-AspSerAlaGluGlyIleGluValAsnAsnThr-67
 75-AspValGlyArgValThrArgIleLysLeuArgAspAspGlnLysGlyValGlu-92
 100-AspValSerGlyLeuIleArgSerAspThrGln-110
 114-ValLysProArgIleAspGlnSerGly-122
 138-ThrProGlyLysSerAspGluAlaLysAspValPheGln-150
 169-LeuIleGlyLysAsnAspArgIleLeuAsn-178
 196-AlaHisPheAspProSerAspGlnSer-204
 212-GlnSerProAsnAspLysLeuIle-219
 228-GluSerGlyIleAsnIleGluThrThrGlySerGlyIleLysLeuAsnSer-244
 256-SerPheAspSerProLysThrLysAsnSerLysAsnValLysSerGluAspSer-273

 275-ThrLeuTyrAspSerArgSerGluValAlaAsnLeuProAspAspArgSerLeu-292
 300-GlnSerValArgGlyLeu-305
 311-ValGluTyrLysGlyLeuAsn-317
 325-ProTyrPheAspArgAsnAspSer-332
 345-IleArgIleGluProSerArgLeuGluIleAsnAlaAspGluGlnSerLysGluHisTrpLysGlnGlnPhe
 -368
 371-AlaLeuAsnLysGlyLeu-376
 386-LeuThrGlySerLysMetIleGluLeuAsnAspGlnProSerAlaSerProLysLeuArgPro-406

 419-GlnGlyGlyGlyLeuAspAspLeuGlnValLysLeu-430
 432-AspLeuLeuAspLysPheAspLysLeuProLeuAspLysThrValAla-447
 450-AsnGlySerLeuAlaGluLeuLysSerThrLeuLysSerAlaAsn-464
 469-SerIleAspLysLeuValGlyLysProGlnThrGlnAsnIleProAsnGluLeuAsnGlnThrLeuLysGlu
 LeuArgThrThr-496
 500-ValSerProGlnSer-504
 516-SerLeuAspLysThrLeuLysAspValGln-525
 530-ThrLeuLysGluLysProAsn-536

541-AsnSerSerSerLysAspProIleProLysGlySerArg-553

Hydrophilic Regions - Hopp-Woods

1-MetThrAspAsnSerProPro-8
 12-AlaGlnAlaArgValArgLysAsnAsn-20
 43-LysGluIleArgAsnArgGly-49
 57-AspSerAlaGluGlyIleGlu-63
 75-AspValGlyArgValThrArgIleLysLeuArgAspAspGlnLysGlyValGlu-92
 105-IleArgSerAspThr-109
 116-ProArgIleAspGln-120

 140-GlyLysSerAspGluAlaLysAspValPheGln-150
 171-GlyLysAsnAspArgIleLeu-177
 196-AlaHisPheAspProSerAspGln-203
 214-ProAsnAspLysLeuIle-219
 258-AspSerProLysThrLysAsnSerLysAsnValLysSerGluAspSer-273
 278-AspSerArgSerGluVal-283

 285-AsnLeuProAspAspArgSer-291
 311-ValGluTyrLysGly-315
 328-AspArgAsnAspSer-332
 345-IleArgIleGluProSerArgLeuGluIleAsnAlaAspGluGlnSerLysGluHisTrpLys-365
 390-LysMetIleGluLeuAsnAspGlnProSerAlaSerProLysLeuArgPro-406
 421-GlyGlyLeuAspAspLeuGlnValLysLeu-430

 432-AspLeuLeuAspLysPheAspLysLeuProLeuAspLysThrValAla-447
 454-AlaGluLeuLysSerThrLeuLysSerAlaAsn-464

 469-SerIleAspLysLeuValGly-475

 482-IleProAsnGluLeu-486

 488-GlnThrLeuLysGluLeuArgThr-495
 516-SerLeuAspLysThrLeuLysAspValGln-525
 530-ThrLeuLysGluLysProAsn-536
 543-SerSerLysAspProIleProLysGlySerArg-553

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AMPHI Regions - AMPHI

28-LysLeuGlyPheGlu-32
 42-AlaAlaSerLeuAsp-46
 105-LeuArgAlaLysLysVal-110
 118-ValProArgIleSerArgAlaGlnAlaLeuAspXxxLeuSerXxxMetAlaAsnIleSerGlyTyrArgAla
 ValIleGluAlaAlaAsnAlaPheGlyArgXxxPheThrGlyGlnIleThrAlaAlaGly-161
 175-ValAlaGlyLeuAlaAlaIleGlyThrAlaAsnSerLeuGlyAlaValValArgValPhe-194
 201-AlaGluGlnLeuGluSerMetGlyGly-209
 225-AspGlyTyrAlaLysValMet-231
 264-AlaProLysXxxXxxXxxLysGluMetValGluSerMetLys-277
 281-ValIleValAspLeu-285
 307-GlyValLysIleIleGlyTyrThrAspMetAlaAsnArgLeuAlaGlyGln-323
 330-ThrAsnLeuValAsnLeuThrLysLeuLeuSer-340
 404-LysLeuAlaProAlaXxxIle-410
 428-AsnHisPheIleVal-432
 451-LeuHisThrProLeuMetSerValThrAsnAlaIleSerGlyIleIle-466

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469-GlyAlaLeuLeuGln-473
 478-AsnGlyPheValSerLeuLeuSerPheValAla-488
 494-IleAsnIlePheGlyGly-499

Antigenic Index - Jameson-Wolf

4-GlyIleProArgGluSerLeuSerGlyGluThrArgVal-16
 44-SerLeuAspAspAlaAla-49
 72-ValAsnAlaProSerGluAspGluLeuProLeuLeuLysGluGlyGln-87
 94-TrpProArgGlnAsnGluAlaLeu-101
 105-LeuArgAlaLysLysValAsn-111
 117-MetValProArgIleSerArg-123
 159-AlaAlaGlyLysValProProAla-166
 202-GluGlnLeuGluSerMetGlyGlyLys-210
 215-AspPheProGlnGluSerGlyGlySerGlyAspGlyTyrAlaLysValMetSer-232
 242-LeuPheAlaGluGlnAlaLysGluValAsp-251
 259-IleProGlyLysProAlaProLysXxxXxxXxxLysGluMetValGluSerMetLysProGlySer-280
 290-GlyGlyAsnCysGluLeuThrLysGlnGlyGlu-300
 320-LeuAlaGlyGlnSerSer-325
 338-LeuLeuSerProAsnLysAspGlyGluIle-347
 349-LeuAspPheGluAspValIle-355
 360-ThrValThrArgAspGlyGluIleThrPhePro-370
 378-AlaGlnProGlnGlnThrProSerGluLysAlaAlaProAlaAlaLysProGluProLysPro-398
 509-MetPheArgLysGly-513

Hydrophilic Regions - Hopp-Woods

4-GlyIleProArgGluSerLeuSerGlyGluThrArgVal-16
 44-SerLeuAspAspAlaAla-49
 74-AlaProSerGluAspGluLeuProLeuLeuLysGluGlyGln-87
 96-ArgGlnAsnGluAlaLeu-101
 105-LeuArgAlaLysLysValAsn-111
 117-MetValProArgIleSerArg-123
 202-GluGlnLeuGluSerMetGly-208
 215-AspPheProGlnGluSerGlyGlySerGlyAspGlyTyrAla-228
 242-LeuPheAlaGluGlnAlaLysGluValAsp-251
 260-ProGlyLysProAlaProLysXxxXxxXxxLysGluMetValGluSerMetLysPro-278
 291-GlyAsnCysGluLeuThrLysGlnGlyGlu-300
 340-SerProAsnLysAspGlyGluIle-347
 349-LeuAspPheGluAspValIle-355
 360-ThrValThrArgAspGlyGluIle-367
 382-GlnThrProSerGluLysAlaAlaProAlaAlaLysProGluProLysPro-398
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AMPHI Regions - AMPHI

56-AsnGlyPheGluAlaPheAlaProPhe-64
 80-AlaThrValAsnThr-84

Antigenic Index - Jameson-Wolf

21-TyrAlaLysLysAlaGlyGlyPheArgPheLysAspAsnHisAsnProArgAspPheLeuAlaArgThrGlnGlyThrAlaAlaArgAlaHisAlaAlaGlnGlnAsnGlyPheGlu-59
 73-AlaThrGlyAsnAlaGlyGln-79
 103-AspLysAlaAlaLeu-107

Hydrophilic Regions - Hopp-Woods

21-TyrAlaLysLysAlaGlyGlyPheArgPheLysAspAsnHisAsnProArgAspPheLeuAla-41
 43-ThrGlnGlyThrAlaAlaArgAlaHisAla-52
 103-AspLysAlaAlaLeu-107

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a157**AMPHI Regions - AMPHI**

10-ArgArgGluLeuArgArgAla-16
 32-IleAsnArgLeuLeuLysArgTyrIleLysArgGly-43
 61-PheValArgAlaAlaGln-66
 137-LeuGlyGlnAlaGlyGly-142
 167-GlnPheValAspArgLeuProArgGluProHisAspLeuLeuAspGly-183

Antigenic Index - Jameson-Wolf

1-MetArgAsnGluGluLysHisAlaLeuArgArgGluLeuArgArgAlaArgAlaGlnMetGlyHisGlnGlyArgLeuAlaAla-28
 34-ArgLeuLeuLysArgTyrIleLysArgGlyArgLysIle-46
 51-ProMetGlyLysGluLeuArgLeuAspGlyPheVal-62
 64-AlaAlaGlnLysArgGlyAlaLysLeu-72
 77-IleGluProArgSerArgArgMetTrp-85
 88-ProTyrProGluSerGlyMetGluArgGluArgIleArgGlyArgAlaLysLeuAsnVal-107
 110-PheAlaGlyArgLysIleArgVal-117
 129-GlyIleAspArgGluGlyTyrArgLeuGlyGln-139
 153-TyrArgLeuGlnAla-157
 168-PheValAspArgLeuProArgGluProHisAspLeuLeuLeu-181

Hydrophilic Regions - Hopp-Woods

1-MetArgAsnGluGluLysHisAlaLeuArgArgGluLeuArgArgAlaArgAlaGlnMet-20
 34-ArgLeuLeuLysArgTyrIleLysArgGlyArgLysIle-46
 54-LysGluLeuArgLeu-58
 64-AlaAlaGlnLysArgGlyAla-70
 77-IleGluProArgSerArgArg-83
 92-SerGlyMetGluArgGluArgIleArgGlyArgAlaLysLeu-105
 111-AlaGlyArgLysIleArgVal-117
 129-GlyIleAspArgGluGlyTyrArg-136
 153-TyrArgLeuGlnAla-157
 170-AspArgLeuProArgGluProHisAspLeuLeu-180

a158**AMPHI Regions - AMPHI**

20-PheSerArgAlaAlaGluGlnLeu-27
 33-AlaValSerArgIleValLysArgLeuGlu-42
 46-GlyValAsnLeuLeuAsnArgThr-53
 63-GlyAlaGlnTyrPheArgArgAlaGlnArgIleLeuGlnGlu-76
 85-LeuAlaValHisGluIleProGln-92
 166-ValIleAlaSerPro-170
 178-ThrProGlnSerThrGluGluLeu-185
 188-HisGlnCysLeuGlyPheThrGluProGlySerLeuAsnThrTrpAlaVal-204

Antigenic Index - Jameson-Wolf

1-MetLysThrAsnSerGluGluLeu-8
 16-GluSerGlySerPheSerArgAlaAlaGlu-25
 36-ArgIleValLysArgLeuGluGluLysLeuGly-46
 49-LeuLeuAsnArgThrThrArgGlnLeuSerLeuThrGluGlyAlaGlnTyrPheArgArgAlaGlnArgIleLeuGln-75
 78-AlaAlaAlaGluThrGluMet-84
 90-IleProGlnGlyValLeuArgValAspSer-99
 114-LysPheAsnGluArgTyrProHisIleArg-123
 136-IleGluArgLysValAspIle-142
 144-LeuArgAlaGlyGluLeuAspAspSerGlyLeuArgAla-156
 158-HisLeuPheAspSerArgPheArgVal-166

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168-AlaSerProGluTyrLeuAlaLysHisGlyThrProGlnSerThrGluGluLeuAla-186
 192-GlyPheThrGluProGlySerLeuAsn-200
 207-AlaGlnGlyAsnProTyrLysIle-214
 216-ProHisPheThrAlaSerSerGlyGluIleLeu-226
 229-LeuCysLeuSerGlyCysGly-235
 243-LeuValAspAsnAspIleAlaGluGlyLysLeu-253
 258-AlaGluGlnThrSerAsnLysThrHisProPhe-268
 273-TyrSerAspLysAlaValAsnLeu-280
 292-GluLeuGlyAsnAsnLeuCysGly-299

Hydrophilic Regions - Hopp-Woods

1-MetLysThrAsnSerGluGluLeu-8
 19-SerPheSerArgAlaAlaGlu-25
 36-ArgIleValLysArgLeuGluGluLysLeuGly-46
 58-SerLeuThrGluGluGlyAlaGlnTyrPheArgArgAlaGlnArgIleLeuGln-75
 78-AlaAlaAlaGluThrGluMet-84
 95-LeuArgValAspSer-99
 114-LysPheAsnGluArgTyrPro-120
 136-IleGluArgLysValAspIle-142
 144-LeuArgAlaGlyGluLeuAspAspSerGlyLeuArgAla-156
 162-SerArgPheArgVal-166
 180-GlnSerThrGluGluLeuAla-186
 246-AsnAspIleAlaGluGlyLysLeu-253
 260-GlnThrSerAsnLysThrHis-266
 276-LysAlaValAsnLeu-280
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AMPHI Regions - AMPHI

6-LysLeuValAspPheAlaGlnLeuThrGly-15
 72-GlyLeuGlyHisVal-76
 121-AlaAspLeuMetAsnGlyLeuProGluThr-130
 157-GlyThrValSerMetValAsnAlaLeuSerSer-167
 186-LeuSerGlyValLeuLysGlyTrpGlnAspLysArg-197
 200-HisLeuIleGlnLysValIleAspLysProGlu-210
 218-MetValAlaAlaAlaAsn-223
 229-LeuMetArgArgPhe-233
 242-HisAlaPheValAsnHisIleArg-249
 279-PheGlyLysAlaPheLys-284

Antigenic Index - Jameson-Wolf

2-AspIleLeuAspLysLeuVal-8
 28-SerValArgHisGluThrLeuGlnArgGluGlyLeu-39
 51-CysIleAspGlyGluThrSerProArgProValSerThrGlyAsp-65
 77-LeuSerHisAspGlyLysCysGlyGluSerLeuGlnProAspMetArgGlnHisGly-95
 101-GlnCysGlyAsnGlyGlnAspMet-108
 115-PheArgTyrAspThrHisAla-121
 123-LeuMetAsnGlyLeu-127
 149-LeuGluSerLysLysProLeu-155
 178-LeuGluGlnAspLysAspValGluLeu-186
 192-GlyTrpGlnAspLysArgLeuGly-199
 205-ValIleAspLysProGluAspGluTrpAsnValAspLysMetVal-219
 228-GlnLeuMetArgArgPheLysSerArgValGlyLeuSerProHis-242
 255-LeuLeuLeuLysLysAsnProAspSerVal-264
 274-GlnSerGluThrHisPhe-279
 281-LysAlaPheLysArg-285
 290-SerProGlyGlnTyrArgLysGluGlyGlyGlnLys-301

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Hydrophilic Regions - Hopp-Woods

2-AspIleLeuAspLysLeuVal-8
 29-ValArgHisGluThrLeuGlnArgGluGlyLeu-39
 53-AspGlyGluThrSerProArgProValSer-62
 79-HisAspGlyLysCysGlyGluSerLeuGlnProAspMetArgGln-93
 101-GlnCysGlyAsnGlyGlnAsp-107
 149-LeuGluSerLysLysProLeu-155
 178-LeuGluGlnAspLysAspValGluLeu-186
 193-TrpGlnAspLysArgLeuGly-199
 205-ValIleAspLysProGluAspGluTrpAsnVal-215
 228-GlnLeuMetArgArgPheLysSerArgValGly-238
 255-LeuLeuLeuLysLysAsnProAspSer-263
 281-LysAlaPheLysArg-285
 293-GlnTyrArgLysGluGlyGlnLys-301

a163**AMPHI Regions - AMPHI**

60-SerSerLeuGlyAsnIle-65
 67-LeuGlyArgAspGluAsp-72
 76-PheGlyPheLeuSerTrpLeuAlaMetLeuPhe-86
 100-AlaGluProLeuMetHisTyrPheSerAspIleThrAla-112
 170-IleSerGlyArgPheGlyAspAlaIleAspIleMetAlaLeuLeuAlaThrPhePheGlyIleIleThrThr-193
 227-MetSerLeuAlaValValSerAlaIleSerGlyValGlyLysGlyValLysValLeuSer-246
 272-AlaPheGlyAspAsnIleGlyAsnTyrLeuGlyAsnLeuValArg-286
 313-TrpCysSerTrpAlaProPheValGlyLeuPheIleAla-325
 346-LeuPheGlyValLeuTrpPhe-352
 367-AlaGlyGlyValLeuGluLysMetThrSerSer-377
 380-ThrLeuLeuPheLysPhePheAsnTyrLeuProLeuProGluLeuThrSerIleValSerLeuLeu-401
 438-TrpGlyValLeuMetSerAla-444
 454-GlyLeuGlyAsnLeuGlnSerMetThrLeu-463
 520-GluGlnAspIleLeuLysPheLeuLysHisThrAla-531
 535-MetHisGluLeuGlnArgGluLeu-542
 574-AspPheMetTyrGlyIle-579
 583-GlyGlnAspValSerAspGlnLeu-590
 630-AlaAspIleLeuLysAsnTyr-636

Antigenic Index - Jameson-Wolf

29-AspArgAlaLysGlu-33
 65-IleArgLeuGlyArgAspGluAspValPro-74
 111-ThrAlaGlyThrProGluHisArgGlnGln-120
 166-LeuLysGluLysIleSerGlyArgPheGlyAspAlaIleAsp-179
 200-GlnLeuGlyAlaGlyLeu-205
 237-GlyValGlyLysGlyValLysVal-244
 293-AlaTyrGluArgGluHisLysProTrpPhe-302
 326-ArgIleSerLysGlyArgThrIleArg-334
 370-ValLeuGluLysMetThrSerSerProGluThr-380
 409-ThrSerAlaAspSerGlyIle-415
 421-IleThrSerArgAspLysGlyLeuSerAlaProArgTrp-433
 451-ArgSerGlyGlyLeuGlyAsn-457
 484-LeuSerAlaAspLysLysTyrPheGluThrArgValAsnProThrSer-499
 503-ThrGlyGlyLysTrpLysGluArgLeu-511
 516-SerGlnThrGlnGluGlnAspIle-523
 537-GluLeuGlnArgGluLeuSerGluGluTyrGlyLeu-548
 550-ValArgValAspLysMetPheHisGlnAspGluProAla-562

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566-ValIleArgLysGluThrMetArg-573
 581-SerValGlyGlnAspValSerAspGlnLeuIleAsnAspGlyLysLeuProHisIleArgHisGlnThrThr
 TyrLysProTyr-608
 612-PheAspGlyArgValGlyTyr-618
 622-TyrMetAsnLysAspGluLeuIle-629
 632-IleLeuLysAsnTyrGlu-637
 654-GluGlnValGluLeuAlaGlu-660

Hydrophilic Regions - Hopp-Woods

29-AspArgAlaLysGlu-33
 66-ArgLeuGlyArgAspGluAspValPro-74
 114-ThrProGluHisArgGlnGln-120
 166-LeuLysGluLysIleSerGlyArgPheGlyAsp-176
 238-ValGlyLysGlyValLysVal-244
 293-AlaTyrGluArgGluHisLysPro-300
 327-IleSerLysGlyArgThrIleArg-334
 370-ValLeuGluLysMetThrSerSerPro-378
 422-ThrSerArgAspLysGlyLeuSer-429
 484-LeuSerAlaAspLysLysTyrPheGlu-492
 506-LysTrpLysGluArgLeu-511
 517-GlnThrGlnGluGlnAspIle-523
 537-GluLeuGlnArgGluLeuSerGluGluTyrGlyLeu-548
 550-ValArgValAspLysMetPheHisGlnAspGluProAla-562
 566-ValIleArgLysGluThrMetArg-573
 581-SerValGlyGlnAspValSerAsp-588
 590-LeuIleAsnAspGlyLysLeuProHis-598
 622-TyrMetAsnLysAspGluLeuIle-629
 654-GluGlnValGluLeuAlaGlu-660

a164**AMPHI Regions - AMPHI**

6-AlaAsnPheTyrGluMetLeuThrAlaAla-15
 33-AlaTyrArgAlaLeuLysGlnGlu-40
 75-AlaValSerAlaIleGlyAlaVal-82
 97-TyrIleLeuAsnAspCys-102
 113-LeuSerLysGluLeuAlaGlyLeuLysAla-122
 148-PheGluAspValArgArgPheProGlu-156
 160-LeuGlyArgGlnProArgIleAsnAspLeuAlaHis-171
 189-TyrAlaAsnLeuPheAlaAsnLeuAsnGlyIleGluArgIlePheLys-204
 264-ValProAlaIleTyrThr-269
 282-TrpPheAsnArgIle-286
 311-AlaLysLeuLeuGluGlyTyrGlyLeuSer-320
 362-GluValGlyGluLeuIle-367
 374-MetArgGlyTyrLeuAsn-379
 387-ThrIleValAsnGlyTrpLeuLys-394
 424-ValTyrProArgGluIleGluGluGlu-432
 459-PheValGlnLeuLysGluGlyMet-466
 472-GluIleArgArgHisLeuArgThrVal-480
 484-PheLysIleProLysGln-489
 499-AsnAlaThrGlyLysValLeuLysArgValLeuLysGluGlnPheAspGlyAsn-516

Antigenic Index - Jameson-Wolf

1-MetAsnArgThrTyr-5
 15-AlaCysArgLysAsnGlyAsnGly-22
 26-PheAspGlyLysGluLysThrAlaTyrArgAlaLeuLysGlnGluAlaGluAla-43
 63-ValSerAsnSerThrGlu-68

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88-ThrPheLeuLysAsnSerGlu-94
 100-AsnAspCysLysAla-104
 112-GlyLeuSerLysGluLeuAlaGly-119
 121-LysAlaGlnThrProValGlu-127
 133-GlyGlnSerArgProAspGlyGluMetAlaGluGlyAspAlaPhePheGluAspValArgArgPheProGlu
 LysProAspLeuGlyArgGlnProArgIleAsnAsp-168
 176-SerGlyThrThrGlyHisProLysGlyAla-185
 196-LeuAsnGlyIleGluArgIlePheLysIleSerLysArgAspArgPhe-211
 270-AlaMetSerLysThrLysIle-276
 291-SerGlyGlyAlaProLeuAla-297
 304-PheLysAlaLysPheProArg-310
 317-TyrGlyLeuSerGluAlaSer-323
 330-ThrProGluArgGlnLysAlaArgSer-338
 343-LeuProGlyLeuGluValLysAlaValAspGluGluLeuValGluValProArgGlyGluValGly-364
 367-IleValArgGlyGlySerValMet-374
 382-AlaAlaThrAspGluThrIle-388
 393-LeuLysThrGlyAsp-397
 400-ThrIleAspGluAspGly-405
 410-ValAspArgLysLysAspLeuIleIleSerLysGlyGlnAsnValTyrProArgGluIleGluGluGluIle
 TyrLys-435
 446-GlyValLysAspArgTyrAlaAspGluGluIle-456
 462-LeuLysGluGlyMetAspLeuGlyGluAsnGluIleArgArgHisLeuArg-478
 490-IleHisPheLysAspGlyLeuProArgAsnAlaThrGlyLysValLeuLysArgValLeuLysGluGlnPhe
 AspGlyAsnLys-517

Hydrophilic Regions - Hopp-Woods

15-AlaCysArgLysAsnGlyAsn-21
 26-PheAspGlyLysGluLysThrAlaTyrArgAlaLeuLysGlnGluAlaGluAla-43
 112-GlyLeuSerLysGluLeuAlaGly-119
 135-SerArgProAspGlyGluMetAlaGluGlyAspAlaPhePheGluAspValArgArgPheProGluLysPro
 AspLeuGlyArgGlnProArgIleAsnAsp-168
 198-GlyIleGluArgIlePheLysIleSerLysArgAspArgPhe-211
 304-PheLysAlaLysPheProArg-310
 330-ThrProGluArgGlnLysAlaArgSer-338
 346-LeuGluValLysAlaValAspGluGluLeuValGluValProArgGlyGluValGly-364
 382-AlaAlaThrAspGluThrIle-388
 400-ThrIleAspGluAspGly-405
 410-ValAspArgLysLysAspLeuIleIle-418
 425-TyrProArgGluIleGluGluGluIleTyrLys-435
 446-GlyValLysAspArgTyrAlaAspGluGluIle-456
 462-LeuLysGluGlyMetAspLeuGlyGluAsnGluIleArgArgHisLeuArg-478
 494-AspGlyLeuProArgAsnAlaThr-501
 503-LysValLeuLysArgValLeuLysGluGlnPheAspGlyAsnLys-517
a165-1

AMPHI Regions - AMPHI

17-AlaThrLeuGlyValLeuLysGluLeu-26
 33-ThrLeuIleGluArgLeuGluAsp-40
 72-IleIleAspProAlaArgAlaLeuAsnIleAla-82
 90-GlnPheTrpAlaThr-94
 108-AsnAlaValProHis-112
 125-LeuGlnLysArgTyrAspAlaPheLysThrGlnLysLeuPheGluAsnMet-141
 182-ArgLeuThrArgGlnMetValLysTyrLeuGlnGly-193
 198-ThrGluPheAsnArgHisValGluAspIleLysArgGlu-210
 364-LysThrLysGluGlu-368
 371-AlaSerLeuLeuGluTyrTyr-377

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456-ArgLeuLysGluLeu-460

Antigenic Index - Jameson-Wolf

1-MetAlaGluAlaThrAsp-6
 24-LysGluLeuGluProSerTrp-30
 36-GluArgLeuGluAspValAlaLeuGluSerSerAsnAlaTrpAsnAsnAlaGlyThrGly-55
 97-AlaGluGlyLysLeuGluAspAsnSer-105
 117-MetAsnGluAspHisCysSerTyrLeuGlnLysArgTyrAspAlaPheLysThrGlnLysLeuPheGlu-139
 141-MetGluPheSerThrAspArgAsnLysIleSerAsp-152
 157-MetMetArgGlyArgAspGluAsnGlnPro-166
 169-AlaAsnTyrSerAlaGluGlyThrAspValAspPheGlyArgLeuThrArgGlnMet-187
 191-LeuGlnGlyLysGlyValLysThrGluPheAsnArgHisValGluAspIleLysArgGluSerAspGly-213
 219-ThrAlaAspThrArgAsnProAspGlyGlnLeu-229
 249-GlnLysSerGlyIleProGluGlyLysGlyTyrGly-260
 269-PheArgAsnSerAsnProGluThrAlaGluGlnHisAsn-281
 300-LeuAspThrArgAsnValAspGlyLysArgHisLeu-311
 322-AsnPheLeuLysGlnGlySerLeuMet-330
 361-GluLeuArgLysThrLysGluGluArgPhe-370
 377-TyrProGluAlaAsnProAspAspTrpGlu-386
 395-GlnIleIleLysLysAspSerGluLysGlyGly-405
 415-AlaHisAlaAspGlySer-420
 428-SerProGlyAlaSerThr-433
 446-PheProGluArgThrProSerTrpGluGlyArgLeuLysGluLeuValProGlyTyr-464
 467-LysLeuAsnGluAsnProGluArgAlaAspGlu-477

Hydrophilic Regions - Hopp-Woods

1-MetAlaGluAlaThrAsp-6
 24-LysGluLeuGluPro-28
 36-GluArgLeuGluAspValAlaLeuGluSer-45
 97-AlaGluGlyLysLeuGluAspAsnSer-105
 117-MetAsnGluAspHisCys-122
 125-LeuGlnLysArgTyrAspAlaPheLysThr-134
 141-MetGluPheSerThrAspArgAsnLysIleSerAsp-152
 158-MetArgGlyArgAspGluAsnGlnPro-166
 172-SerAlaGluGlyThrAspValAspPhe-180
 182-ArgLeuThrArgGlnMet-187
 194-LysGlyValLysThrGluPheAsnArgHisValGluAspIleLysArgGluSerAspGly-213
 219-ThrAlaAspThrArgAsnProAspGly-227
 252-GlyIleProGluGlyLysGly-258
 272-SerAsnProGluThrAlaGluGlnHisAsn-281
 300-LeuAspThrArgAsnValAspGlyLysArg-309
 361-GluLeuArgLysThrLysGluGluArgPhe-370
 380-AlaAsnProAspAspTrpGlu-386
 395-GlnIleIleLysLysAspSerGluLysGlyGly-405
 446-PheProGluArgThrProSerTrpGluGlyArgLeuLysGluLeuVal-461
 467-LysLeuAsnGluAsnProGluArgAlaAspGlu-477

a205-1**AMPHI Regions - AMPHI**

6-ProGluGlnAsnValValArgLeuThrGlyLysHisProAsnAspLeuGluAlaValValGlyLys-27
 46-CysHisThrLeuPheAlaLysLeuValGlyAsnIleAlaGluAspGlyGlyLys-63
 75-GlnProTyrGlnAla-79

Antigenic Index - Jameson-Wolf

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1-ProLeuLysGlyLeuProGluGlnAsnVal-10
 13-LeuThrGlyLysHisProAsnAspLeuGluAlaValVal-25
 27-LysCysMetGluThrAspGlyLysGlyAlaProSerGly-39
 57-IleAlaGluAspGlyGlyLysLeuThr-65
 77-TyrGlnAlaGlyLysSerGlyTyr-84
 96-IleAspSerGluGly-100
 103-TyrPheArgArgArgHisTyr-109

Hydrophilic Regions - Hopp-Woods

13-LeuThrGlyLysHisProAsnAspLeuGluAlaValVal-25
 27-LysCysMetGluThrAspGlyLysGlyAla-36
 57-IleAlaGluAspGlyGlyLysLeu-64
 78-GlnAlaGlyLysSerGly-83
 96-IleAspSerGluGly-100
 104-PheArgArgArgHisTyr-109

a206**AMPHI Regions - AMPHI**

32-ProLysGlnThrValArgGlnIleGlnAlaVal-42
 44-IleSerHisIleAspArgThrGlnGly-52
 81-CysSerGlyMetIleGln-86
 99-ArgThrAlaArgAspMet-104
 150-SerGlyLysThrIleLysThrGlu-157

Antigenic Index - Jameson-Wolf

2-PheProProAspLysThrLeu-8
 21-GlyThrThrSerGlyLysHisArgGlnProLysProLysGlnThrValArg-37
 45-SerHisIleAspArgThrGlnGlySerGln-54
 66-ThrProTyrLysTrpGlyGlySerSerThr-75
 96-LysLeuProArgThrAlaArgAspMetAlaAlaAlaSerArgLysIleProAspSerArgLeuLysAlaGly-119
 126-ThrGlyGlyAlaHisArgTyrSer-133
 148-ProSerSerGlyLysThrIleLysThrGluLysLeuSer-160

Hydrophilic Regions - Hopp-Woods

23-ThrSerGlyLysHisArgGlnProLysProLysGlnThrVal-36
 45-SerHisIleAspArgThrGlnGlySerGln-54
 96-LysLeuProArgThrAlaArgAspMetAlaAlaAlaSerArgLysIleProAspSerArgLeuLysAlaGly-119
 149-SerSerGlyLysThrIleLysThrGluLysLeuSer-160

a211**AMPHI Regions - AMPHI**

18-ValGlyAsnGlyValAspGluPheGlyArgGlyAla-29
 57-GlnPheGluArgAla-61
 98-IleGluGlyPheAspLysIleAsnProAla-107

Antigenic Index - Jameson-Wolf

8-AsnGlnLeuGlyGlyArgAsnGlyThrAlaValGlyAsnGlyValAspGluPheGlyArgGlyAlaAspAsnGlnValGluPheLeuGlu-37
 44-GlyAlaSerGlyArgAlaAla-50
 73-GlyGluAspAspValVal-78
 100-GlyPheAspLysIleAsnProAlaVal-108
 141-ArgTyrHisProLysLeuHisAspGlyAsnGlnAsnGlyLysArgHisGlyLysLeuHisHisArgAla-163
 169-CysGlnSerAlaGly-173

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Hydrophilic Regions - Hopp-Woods

10-LeuGlyGlyArgAsnGlyThr-16
 21-GlyValAspGluPheGlyArgGlyAlaAspAsnGlnValGluPheLeuGlu-37
 73-GlyGluAspAspValVal-78
 100-GlyPheAspLysIleAsn-105
 142-TyrHisProLysLeuHisAspGlyAsnGlnAsnGlyLysArgHisGlyLysLeuHisHis-161
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AMPHI Regions - AMPHI

6-TrpAsnGlyIleProAspIleArgThr-14
 16-AspGlnThrIleArgLysHisAlaHis-24
 40-PheGlnThrAlaGlnAsp-45
 63-CysLeuGlnPheAspSerIleAsnLeuIleGluHisIle-75
 89-ThrArgArgLeuHisGluHis-95
 199-ArgLeuLeuGlyHis-203
 238-HisAsnHisLeuTyrArgSerIleThrGlnAlaGluAlaGluLysIle-253
 262-TyrAlaGluProLeuCysGlyLeu-269
 397-TrpAsnGluAlaGluGluAla-403
 439-AspSerProAspHis-443
 445-ProLeuValGlyAlaLeuGlyAspIleAlaAlaMetGlnGlnThr-459
 481-AlaTyrAlaAsnThrAlaHisGlyThrArgGlyLeu-492
 506-IleLeuGlyLeuPro-510

512-ProLeuSerLysArgLeuArg-518

Antigenic Index - Jameson-Wolf

10-ProAspIleArgThrLeuAspGlnThrIleArgLysHisAlaHisProLeu-26
 33-ProAspAsnGlnIleProAsnPhe-40
 42-ThrAlaGlnAspAlaSerAspAlaGluCysArgLeuLysHisArgLeuAspGln-59
 85-ProProSerArgThrArgArgLeuHisGlu-94
 105-AlaIleProGlnThrGluSerLysProAspLysProTrp-117
 120-LeuProGlnThrSerGluArgGlnLysProGluHis-131
 158-LeuGluAlaArgLysAlaAlaGln-165
 168-SerGlyAsnArgGlnGly-173
 178-LysIleSerProHisAspThrGluGlnThrGlu-188
 193-GlyTyrGlyTyrThrLys-198
 205-LeuProGluSerGluThrTrpGlyGlyAsnGly-215
 220-AsnTyrSerArgThrGluGlnGlnArgAsnHisGluLeuGlyLeu-234
 236-LysHisHisAsnHisLeu-241
 245-IleThrGlnAlaGluAlaGluLysIleAla-254
 258-LeuAsnThrProTyrAla-263
 294-LeuHisGluAspThrProLeu-300
 302-AspIleSerHisAspGlyGluLysTrpIle-311
 328-ThrGlyAlaAsnSerProTyrLeuPro-336
 346-ArgGlnIleArgGlyGlnThrGlyLeuThrProSerThrProPheSerGluGlnLeuArg-365
 376-ProSerTrpHisGly-380
 391-AsnSerSerHisThrGlyTrpAsnGluAlaGluAlaSerAsnArgGlnAla-408
 424-AsnProAsnProGlnLysHisGlnGly-432
 436-IleArgCysAspSerProAspHisLeuPro-445

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464-AlaLeuAspLysAsnTyrArgIleAspAla-473

486-AlaHisGlyThrArgGlyLeuAla-493

511-HisProLeuSerLysArgLeuArgHis-519

522-HisProAsnArgAlaIle-527

531-IleValArgArgLysAspLeuThrPro-539

Hydrophilic Regions - Hopp-Woods

10-ProAspIleArgThrLeuAspGlnThrIleArgLysHisAla-23

44-GlnAspAlaSerAspAlaGluCysArgLeuLysHisArgLeuAspGln-59

87-SerArgThrArgArgLeuHisGlu-94

105-AlaIleThrProGlnThrGluSerLysProAspLys-115

122-GlnThrSerGluArgGlnLysProGluHis-131

158-LeuGluAlaArgLysAlaAlaGln-165

180-SerProHisAspThrGluGlnThrGlu-188

206-ProGluSerGluThr-210

222-SerArgThrGluGlnGlnArgAsnHisGlu-231

246-ThrGlnAlaGluAlaGluLysIleAla-254

294-LeuHisGluAspThrProLeu-300

303-IleSerHisAspGlyGluLysTrpIle-311

346-ArgGlnIleArgGly-350

398-AsnGluAlaGluGluAlaSerAsnArgGlnAla-408

426-AsnProGlnLysHisGlnGly-432

436-IleArgCysAspSerProAsp-442

467-LysAsnTyrArgIleAspAla-473

513-LeuSerLysArgLeuArgHis-519

531-IleValArgArgLysAspLeuThrPro-539

a214-1**AMPHI Regions - AMPHI**

6-CysLysLeuPheValLeuIle-12

69-ValThrArgGlyGlyLysGlyGlyGluSerVal-79

88-PheSerGlnThrLeuAsp-93

122-LysValGlnArgGlyGlyAspVal-129

150-ThrLysSerGlyAlaLysSerAlaSerLys-159

Antigenic Index - Jameson-Wolf

23-LeuGlnSerAspSerArgGlnProIle-31

33-IleGluAlaAspGlnGlySerLeuAspGlnAlaAsnGlnSerThrThrPheSerGlyAsn-52

71-ArgGlyGlyLysGlyGlyGluSerValArgAlaGluGlySerProValArgPheSerGlnThrLeuAspGlyGly

LysGlyThrValArgGlyGlnAlaAsnAsn-105

119-GlyAsnAlaLysValGlnArgGlyGlyAspValAlaGlu-131

137-TyrAsnThrLysThrGluVal-143

148-GlySerThrLysSerGlyAlaLysSerAlaSerLysSerGlyArgValSerVal-165

168-GlnProSerSerThrGlnLysSerGlu-176

Hydrophilic Regions - Hopp-Woods

25-SerAspSerArgGlnProIle-31

33-IleGluAlaAspGlnGlySerLeuAspGlnAlaAsn-44

71-ArgGlyGlyLysGlyGlyGluSerValArgAlaGluGlySerPro-85

92-LeuAspGlyGlyLysGlyThrValArgGlyGlnAla-103

121-AlaLysValGlnArgGlyGlyAspValAlaGlu-131

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148-GlySerThrLysSerGlyAlaLysSerAlaSerLysSerGlyArg-162
 171-SerThrGlnLysSerGlu-176

a215**AMPHI Regions - AMPHI**

21-SerLeuSerAlaTrpLeuGlyArgIle-29
 67-SerSerLysGlyAlaLysGlnPheProGlu-76

Antigenic Index - Jameson-Wolf

3-ValArgTrpArgTyrGly-8
 28-ArgIleSerGluValGluIleGluGluValArgLeuAsnProAspGluProGlnTyrThrMetAspGlyLeuA
 spGlyArgArgPheAspGluGlnGlyTyrLeuLys-63
 65-HisLeuSerSerLysGlyAlaLysGlnPheProGluSerSerAspIleHisPheAspSerProHisLeu-87
 99-ValGlySerAspGluAlaValTyrHisThrGluAsnLysGlnValLeuPhe-115
 123-LysThrAlaAspGlyLysArgGlnAlaGlyLysValGluAlaGluLysLeuHisValAspThrGluSerGln
 TyrAlaGlnThrAspThrProVal-154
 160-AlaSerHisGlyGlnAlaGlyGlyMetThrTyrAspHisLysThrGly-175
 179-PheSerSerLysValLys-184
 187-IleTyrAspThrLysAspMet-193

Hydrophilic Regions - Hopp-Woods

29-IleSerGluValGluIleGluGluValArgLeuAsnProAspGluProGlnTyr-46
 49-AspGlyLeuAspGlyArgArgPheAspGlu-58
 65-HisLeuSerSerLysGlyAlaLysGlnPheProGluSerSerAspIleHisPhe-82
 99-ValGlySerAspGluAlaValTyr-106
 108-ThrGluAsnLysGlnValLeu-114
 123-LysThrAlaAspGlyLysArgGlnAlaGlyLysValGluAlaGluLysLeuHisValAspThrGluSerGln
 TyrAla-148
 170-TyrAspHisLysThr-174
 187-IleTyrAspThrLysAspMet-193

a216**AMPHI Regions - AMPHI**

21-AlaGluGlyLeuArgGluIleAlaAlaAspLeu-31
 62-ArgLysMetAlaAla-66
 167-LeuGlyAspAlaLeuAlaVal-173
 203-ValAlaAspIleMetHis-208
 218-LeuGlyThrProLeuLysGlu-224
 244-GlyArgLeuLysGlyVal-249
 253-GlyAspLeuArgArgLeuPheGlnGluCysAspAsnPheThrGlyLeuSerIle-270
 274-MetHisThrHisProLysThrIleSerAla-283
 292-LysValMetGlnAlaAsn-297

Antigenic Index - Jameson-Wolf

4-AlaGlyAsnGluLysTyrLeuAspTrpAlaArg-14
 16-ValLeuHisThrGluAlaGluGlyLeuArgGluIleAlaAlaAspLeuAspGlu-33
 45-CysLysGlyArgVal-49
 53-GlyMetGlyLysSerGlyHisIleGlyArgLysMetAla-65
 82-GluAlaAlaHisGlyAspLeu-88
 92-ValAspAsnAspVal-96
 101-SerAsnSerGlyGluSerAspGluIle-109
 115-AlaLeuLysArgLysAspIle-121
 127-ThrAlaArgProAspSerThrMetAlaArgHisAlaAsp-139
 146-ValSerLysGluAlaCysPro-152
 179-ArgAlaPheThrProAspAspPheAla-187
 190-HisProAlaGlySerLeuGlyLys-197
 205-AspIleMetHisLysGlyGlyLeuProAla-215

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218-LeuGlyThrProLeuLysGluAlaIle-226
 229-MetSerGluLysGlyLeu-234
 239-ValThrAspGlyGlnGlyArgLeuLysGly-248
 250-PheThrAspGlyAspLeuArgArgLeuPheGlnGluCysAspAsnPheThr-266
 277-HisProLysThrIleSerAlaGluArgLeuAlaThrGluAlaLeuLys-292
 305-ThrAspAlaAspGly-309

Hydrophilic Regions - Hopp-Woods

5-GlyAsnGluLysTyrLeuAspTrpAlaArg-14
 16-ValLeuHisThrGluAlaGluGlyLeuArgGluIleAlaAlaAspLeuAspGlu-33
 45-CysLysGlyArgVal-49
 58-GlyHisIleGlyArgLysMetAla-65
 102-AsnSerGlyGluSerAspGluIle-109
 115-AlaLeuLysArgLysAspIle-121
 128-AlaArgProAspSerThrMetAlaArgHisAlaAsp-139
 146-ValSerLysGluAlaCys-151
 179-ArgAlaPheThrProAspAspPheAla-187
 220-ThrProLeuLysGluAlaIle-226
 229-MetSerGluLysGlyLeu-234
 241-AspGlyGlnGlyArgLeuLys-247
 253-GlyAspLeuArgArgLeuPheGlnGluCysAspAsn-264
 279-LysThrIleSerAlaGluArgLeuAlaThrGluAlaLeuLys-292
 305-ThrAspAlaAspGly-309

a218**AMPHI Regions - AMPHI**

9-AlaLysValValSerThrMet-15
 24-AlaMetAspGluIleHisSer-30
 78-AlaArgSerTrpTrpArgAsnLeuHisGlyAlaPheGlyThrTrpValSerLeuIleLeu-97
 111-TrpGlyGlyLysPheValGlnAlaTrpSerGlnPhePro-123
 176-AspGluProMetThrLeuGluThrValAspArgPheAlaArgXxxAsnArgPheGlnArgAlaLeuSerAla-199

Antigenic Index - Jameson-Wolf

13-SerThrMetProArgAsnGlnGlyTrp-21
 35-GlySerThrGlyAsp-39
 62-ValLysArgArgGlyIleLysAla-69
 71-LeuLeuProProLysGlyArgAlaArgSerTrpTrp-82
 86-HisGlyAlaPheGly-90
 123-ProAlaGlyLysTrpGlyValGluProAsnProVal-134
 143-ValLeuAsnAspGlyLysValLysGlu-151
 167-ThrValGlyLysAspGlyIleAsnProAspGluProMetThr-180
 182-GluThrValAspArgPheAlaArgXxxAsnArgPheGlnArg-195
 201-PheAlaGlnArgArgGlyArgArgMetAspPhe-211

Hydrophilic Regions - Hopp-Woods

63-LysArgArgGlyIleLys-68
 74-ProLysGlyArgAla-78
 143-ValLeuAsnAspGlyLysValLysGlu-151
 167-ThrValGlyLysAspGlyIleAsnProAspGluProMetThr-180
 182-GluThrValAspArgPheAlaArgXxxAsnArgPheGlnArg-195
 201-PheAlaGlnArgArgGlyArgArgMetAspPhe-211

a225-1**AMPHI Regions - AMPHI**

23-LeuAlaAspGluLeuThrAsn-29
 37-IleLeuArgGlnPhe-41

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155-AsnAlaMetGlyLeu-159
 180-PheMetGlnHisIlePheLys-186
 215-GlyAspMetValXxxPheArgThrLeuGlyGlySerArg-227
 246-ThrGlyLysAsnIle-250

Antigenic Index - Jameson-Wolf

22-AlaLeuAlaAspGluLeuThr-28
 32-SerSerArgGluGlnIleLeu-38
 41-PheAlaGluAspGluGlnProVal-48
 52-AsnArgXxxProAlaArgArgAlaGlyAsnAlaAspGluLeuIle-66
 71-GlyLeuAsnGluGlnProVal-77
 81-AsnArgXxxProAlaArgArgAlaGlyAsnAlaAspXxx-93
 100-GlyLeuAsnGluGlnProVal-106
 110-AsnArgValProAlaArgArgAlaGlyAsnAlaAspGluLeuIle-124
 129-GlyLeuAsnGluGlnProVal-135
 137-ProValAsnArgAlaProAlaArgArgAlaGlyAsnAlaAspGluLeuIle-153
 173-ThrGlyPheAspCysSerGly-179
 193-LeuProArgThrSerAlaGluGlnAlaArgMet-203
 205-ThrProValAlaArgSerGluLeuGlnProGlyAspMetValXxx-219
 222-ThrLeuGlyGlySerArgIle-228
 242-HisAlaProArgThrGlyLysAsnIleGlu-251
 254-SerLeuSerHisLysTyrTrpSerGlyLys-263
 268-ArgArgValLysLysAsnAspProSerArgPhe-278

Hydrophilic Regions - Hopp-Woods

22-AlaLeuAlaAspGluLeuThr-28
 32-SerSerArgGluGlnIleLeu-38
 41-PheAlaGluAspGluGlnPro-47
 53-ArgXxxProAlaArgArgAlaGlyAsnAlaAspGluLeuIle-66
 82-ArgXxxProAlaArgArgAlaGlyAsnAla-91
 112-ValProAlaArgArgAlaGlyAsnAlaAspGluLeuIle-124
 140-ArgAlaProAlaArgArgAlaGlyAsnAlaAspGluLeuIle-153
 195-ArgThrSerAlaGluGlnAlaArgMet-203
 207-ValAlaArgSerGluLeuGlnPro-214
 245-ArgThrGlyLysAsnIleGlu-251
 268-ArgArgValLysLysAsnAspProSerArg-277
a226

AMPHI Regions - AMPHI

44-LeuIleAlaTyrLeuLys-49
 61-AlaAlaGlnPheIleAspPheTrpLeu-69
 98-GlnLeuAlaGlySerValThrGlyIleValThr-108
 141-ArgSerIleGlyGlyIleProAlaIleThr-150
 157-AlaGlyLeuValGlyGlnIleAlaGlyTyrLys-167
 197-GluArgSerArgArg-201

Antigenic Index - Jameson-Wolf

3-GluIleLeuArgGlnProSer-9
 25-ValArgThrArgThrGlyAsnIle-32
 81-TyrGlnAsnArgArgLysIle-87
 117-GlyAlaGluArgGluVal-122
 128-SerLysSerValThrAsn-133
 139-IleThrArgSerIleGlyGly-145
 167-LysMetLeuLysAsnThrVal-173
 195-SerLeuGluArgSerArgArgMetAla-203

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Hydrophilic Regions - Hopp-Woods

25-ValArgThrArgThr-29
 82-GlnAsnArgArgLysIle-87
 117-GlyAlaGluArgGluVal-122
 195-SerLeuGluArgSerArgArgMetAla-203
a227

AMPHI Regions - AMPHI

36-GlyValLeuPheAlaLeuLeuGlnAla-44
 52-LeuGlnGlnLeuThrAspAlaLeu-59
 74-ValIleSerTyrLeuAspLeuIleAlaAspAspTrpPheSer-87
a228

AMPHI Regions - AMPHI

24-GluValLysGluAlaValGlnAlaValGlu-33
 40-AlaAlaSerAlaAlaGluSerAlaAlaSerAlaValGluGluAlaLysAspGlnValLysAspAla-61
 78-GluAlaValThrGluAlaAlaLysAspThrLeuAsnLysAlaAlaAspAlaThrGlnGluAlaAlaAspLysMetLysAspAlaAla-106

Antigenic Index - Jameson-Wolf

18-SerGlnGluAlaLysGlnGluValLysGluAlaValGln-30
 32-ValGluSerAspValLysAspThrAlaAlaSerAlaAlaGluSerAlaAlaSerAlaValGluGluAlaLysAspGlnValLysAspAlaAlaAlaAspAlaLysAlaSerAlaGluGluAlaValThrGluAlaLysGluAlaValThrGluAlaAlaLysAspThrLeuAsnLysAlaAlaAspAlaThrGlnGluAlaAlaAspLysMetLysAspAlaAlaLys-107

Hydrophilic Regions - Hopp-Woods

18-SerGlnGluAlaLysGlnGluValLysGluAlaValGln-30
 32-ValGluSerAspValLysAspThrAlaAlaSerAlaAlaGluSerAlaAlaSerAlaValGluGluAlaLysAspGlnValLysAspAlaAlaAlaAspAlaLysAlaSerAlaGluGluAlaValThrGluAlaLysGluAlaValThrGluAlaAlaLysAspThrLeuAsnLysAlaAlaAspAlaThrGlnGluAlaAlaAspLysMetLysAspAlaAlaLys-107

a230-1**AMPHI Regions - AMPHI**

6-GluLysTyrArgThr-10
 49-AspHisSerIleAsnAsn-54
 56-IleGlnAsnGluGln-60
 73-GlnSerLeuLeuGln-77
 81-LeuLysGlnGlyAlaLys-86
 96-GlnIleLysGlnIleIle-101
 133-PheValGluGluIleArgAspGlnPhe-141
 144-GlnAsnLeuValAsnLeuVal-150
 161-AlaGluGlnLeuIleArgLeuThrGlnValAsnArgThrIleArg-175
 184-PheIleAlaGlnVal-188
 194-AspLeuGlnLysPheTyrAsn-200
 234-GluValLysAsnAlaPheGluGluArgValAlaArgLeu-246
 272-ValAlaAspPheAsnLys-277
 284-AspAspAlaPheAsnHisProSerSerLeuAlaGluAla-296
 319-SerGlyMetProGluAsnLeuIleAsnAlaVal-329
 398-LeuAsnGlyGlyLys-402
 426-GluAlaTyrAlaGluLeu-431
 444-ValArgLeuIleGlyLeuProAlaPro-452
 456-GluValGlnAlaValThrProProAspAspIleAla-467
 488-LeuLeuIleArgTyrPheAsn-494

Antigenic Index - Jameson-Wolf

4-SerIleGluLysTyrArgThrProAla-12

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32-SerHisProGlyAlaAsp-37
 42-ValGlyAspGluLysIleSerAspHisSerIle-52
 56-IleGlnAsnGluGlnAlaAspGlyGlyGlyProSerArgAspAlaVal-71
 80-TyrLeuLysGlnGlyAla-85
 92-ValSerSerGluGlnIleLys-98
 101-IleValAspAspProAsnPheHisAspAlaAsnGlyLysPheAsp-115
 122-TyrLeuSerGlnArgHisMetSerGluAspGlnPheValGluGluIleArgAsp-139
 169-GlnValAsnArgThrIleArgSerHisThrPheAsnProAspGluPhe-184
 189-LysValSerGluAlaAspLeu-195
 199-TyrAsnAlaAsnLysLysAspTyrLeu-207
 223-AspPheAlaAspLysGlnThrValSerGluThrGluValLysAsnAlaPheGluGluArgValAlaArg-245
 247-ProAlaAsnGluAlaLysProSerPheGluGlnGluLysAlaAlaValGluAsnGluLeuLysMetLysLysAlaValAlaAspPheAsnLysAlaLysGluLysLeuGlyAspAspAlaPheAsnHisProSerSerLeuAlaGluAlaAlaLysAsnSerGlyLeuLysValGluThrGlnGluThrTrpLeuSerArgGlnAspAlaGlnMetSerGlyMetProGluAsn-324
 330-PheSerAspAspValLeuLysLysLysHisAsnSerGlu-342
 355-ArgAlaLysGluValArgGluGluLysThrLeuPro-366
 368-AlaGluAlaLysAspAlaValArg-375
 377-AlaTyrIleArgThrGluAlaAlaLysLeuAlaGluAsnLysAlaLysAspValLeu-395
 399-AsnGlyGlyLysAlaValAsp-405
 417-GlnGlnAlaArgGlnSerMetProProGluAlaTyr-428
 432-LeuLysAlaLysProAlaAsnGlyLysProAla-442
 459-AlaValThrProProAspAspIleAla-467
 476-AlaLeuAlaGlnGlnGlnSerAlaAsnThrPhe-486
 493-PheAsnGlyLysIleLysGlnThrLysGlyAlaGlnSerValAspAsnGlyAspGlyGln-512

Hydrophilic Regions - Hopp-Woods

6-GluLysTyrArgThr-10
 42-ValGlyAspGluLysIleSerAsp-49
 56-IleGlnAsnGluGlnAlaAspGlyGlyGlyProSerArgAspAlaVal-71
 92-ValSerSerGluGlnIleLys-98
 101-IleValAspAspProAsnPhe-107
 110-AlaAsnGlyLysPheAsp-115
 126-ArgHisMetSerGluAspGlnPheValGluGluIleArgAsp-139
 189-LysValSerGluAlaAspLeu-195
 200-AsnAlaAsnLysLysAspTyrLeu-207
 223-AspPheAlaAspLysGlnThrValSerGluThrGluValLysAsnAlaPheGluGluArgValAlaArg-245
 247-ProAlaAsnGluAlaLysProSerPheGluGlnGluLysAlaAlaValGluAsnGluLeuLysMetLysLysAlaValAlaAspPheAsnLysAlaLysGluLysLeuGlyAspAspAlaPheAsn-288
 292-SerLeuAlaGluAlaAlaLysAsnSerGlyLeuLysValGluThrGlnGlu-308
 310-TrpLeuSerArgGlnAspAlaGlnMet-318
 333-AspValLeuLysLysLysHisAsnSer-341
 355-ArgAlaLysGluValArgGluGluLysThrLeuPro-366
 368-AlaGluAlaLysAspAlaValArg-375
 377-AlaTyrIleArgThrGluAlaAlaLysLeuAlaGluAsnLysAlaLysAspValLeu-395
 417-GlnGlnAlaArgGlnSerMetPro-424
 432-LeuLysAlaLysProAlaAsnGly-439
 461-ThrProProAspAspIleAla-467
 496-LysIleLysGlnThrLysGlyAlaGlnSerValAspAsnGlyAspGlyGln-512
a231-1

AMPHI Regions - AMPHI

7-IleAsnArgProTyrGlnLysProAlaGluLeu-17
 98-ArgIlePheSerPheProGln-104

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209-AlaValAspAsnValLysGlyValAlaVal-218
 228-AlaValAlaGlyPheArgArgCysSerAlaAla-238
 263-LeuAlaAlaValProArgIleThrGln-271
 281-LysProPheHisAspPhePheAsnLeu-289

Antigenic Index - Jameson-Wolf

1-MetSerLysArgLysSerIleAsnArgProTyrGlnLysProAlaGlu-16
 18-ProProLeuGlnAsnAsnProProPheTyrArgLysAsnArgArgLeuAsn-34
 39-AlaAspGlyGlyCysAlaSerProGlnLysCysArgAlaArgGlyPheGln-55
 90-ProAlaValArgProArgArgLeuArg-98
 135-MetProArgArgProVal-140
 150-PheAlaAspArgAsnLeuArg-156
 166-GluHisAlaAspAlaAsp-171
 174-AlaPheArgArgArgAlaGlnVal-181
 183-AlaArgThrArgAla-187
 194-ArgArgValAspIleArgHisProAspPhe-203
 211-AspAsnValLysGly-215
 231-GlyPheArgArgCysSerAlaAlaGlyGlyArgValGlyThr-244
 246-ValProCysArgAlaGluTyrValGluTyrGlyAsnArgArgProHisArgLeuAlaAla-265
 269-IleThrGlnArgThrGlnLysArgGlnGlyAspGlyLysProPhe-283
 294-MetProMetProSerGluHis-300

Hydrophilic Regions - Hopp-Woods

1-MetSerLysArgLysSerIleAsn-8
 10-ProTyrGlnLysProAlaGlu-16
 26-PheTyrArgLysAsnArgArg-32
 45-SerProGlnLysCysArgAlaArgGly-53
 92-ValArgProArgArgLeuArg-98
 136-ProArgArgProVal-140
 150-PheAlaAspArgAsnLeuArg-156
 166-GluHisAlaAspAlaAsp-171
 174-AlaPheArgArgArgAlaGlnVal-181
 183-AlaArgThrArgAla-187
 194-ArgArgValAspIleArgHis-200
 231-GlyPheArgArgCysSerAlaAlaGlyGlyArgValGlyThr-244
 246-ValProCysArgAlaGluTyr-252
 254-GluTyrGlyAsnArgArgProHisArg-262
 269-IleThrGlnArgThrGlnLysArgGlnGlyAspGlyLysProPhe-283

a232**AMPHI Regions - AMPHI**

23-GlnPheLeuGlyAlaPheAsnAspAsnVal-32
 55-GlyGlnMetLeuAsn-59
 74-SerLeuSerGlyGlnLeuGlyAsnLysPheAspLysAlaValLeuAlaArgTrpAlaLysValLeuGluMetIleIleMet-100
 127-ThrLeuPheGlyProLeuLysTyr-134
 160-AlaIleLeuPheGly-164
 167-LeuGlyThrAlaValAlaGlyValProProTyrIleValGlyIleLeuVal-183
 214-ValArgGlyThrLysSerLeuLeuArgGlu-223
 251-LeuProThrPheThrGln-256
 319-ArgPheGluGlyLeuAsn-324
 340-AlaValMetThrLeuIleGlyPhePheGlyGlyPhePheSerValProLeuTyrThrTrpLeu-360

Antigenic Index - Jameson-Wolf

1-MetTyrAlaLysLysGlyGlyLeuGlyLeuValLysSerArgArgPhe-16
 75-LeuSerGlyGlnLeuGlyAsnLysPheAspLys-85

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139-AspTyrLeuAspAspLysGluLeuMetMet-148
 200-ValProAlaLysAlaAlaAspThrGlnIle-209
 215-ArgGlyThrLysSerLeuLeuArgGluThrValArgHisLysPro-229
 258-HisLeuGlyGlyAsnAspAsnVal-265
 286-LysPheSerArgGluArgLeuArg-293
 316-HisGlyHisArgPheGluGly-322
 363-AlaSerSerGluThrPheArgAlaArgAla-372
 420-IleLysArgGluArgArgPheLeu-427
 431-AlaIleArgLysLysPro-436

Hydrophilic Regions - Hopp-Woods

2-TyrAlaLysLysGlyGly-7
 11-ValLysSerArgArgPhe-16
 81-AsnLysPheAspLys-85
 140-TyrLeuAspAspLysGluLeuMet-147
 201-ProAlaLysAlaAlaAspThrGlnIle-209
 215-ArgGlyThrLysSerLeuLeuArgGluThrValArgHis-227
 286-LysPheSerArgGluArgLeuArg-293
 318-HisArgPheGluGly-322
 366-GluThrPheArgAlaArgAla-372
 420-IleLysArgGluArgArgPheLeu-427
 431-AlaIleArgLysLysPro-436

a233**AMPHI Regions - AMPHI**

61-PheAlaAspLysValGlnThr-67
 71-GlnValArgValTrpLysAsn-77
 88-AsnGlyValAlaLysLeuLeuGluThr-96
 119-AlaLeuThrArgLeuIleGluGlnAlaGlyAsnAla-130
 139-ProValAlaAspThrLeuLysCysAlaAspGlyGlyAsn-151
 180-AlaAlaGluAsnLeuAspGlyIleThrAsp-189

Antigenic Index - Jameson-Wolf

1-MetLysArgLysAsnIle-6
 16-AlaArgPheGlyAlaAspLysProLysGlnTyrValGluIleGlySerLysThrValLeu-35
 43-GluArgHisGluAlaValAsp-49
 56-SerProGluAspThrPheAlaAspLysValGln-66
 75-TrpLysAsnGlyGlyGlnThrArgAlaGluThrValArgAsnGlyVal-90
 100-AlaGluThrAspAsn-104
 109-AspAlaAlaArgCys-113
 115-LeuProSerGluAlaLeu-120
 123-LeuIleGluGlnAlaGlyAsnAlaAlaGluGlyGly-134
 142-AspThrLeuLysCysAlaAspGlyGlyAsnIle-152
 155-ThrValGluArgThrSerLeu-161
 182-GluAsnLeuAspGlyIleThrAspGluAlaSerAlaValGluLysLeuGlyIle-199
 206-GlyAspAlaArgAsnLeuLysLeuThrGlnProGlnAspAlaTyr-220

Hydrophilic Regions - Hopp-Woods

1-MetLysArgLysAsnIle-6
 18-PheGlyAlaAspLysProLysGlnTyrVal-27
 43-GluArgHisGluAlaValAsp-49
 56-SerProGluAspThrPheAlaAspLysValGln-66
 79-GlyGlnThrArgAlaGluThrValArg-87
 100-AlaGluThrAspAsn-104
 127-AlaGlyAsnAlaAlaGlu-132
 142-AspThrLeuLysCysAlaAsp-148

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182-GluAsnLeuAspGlyIleThrAspGluAlaSerAlaValGluLysLeuGlyIle-199
206-GlyAspAlaArgAsnLeuLys-212

a234-2**AMPHI Regions - AMPHI**

26-ArgSerLeuGluValGluLysValAlaSer-35
68-AspArgLeuGlySerGln-73
83-GlnGlnThrAsnArgPheAsnValLeuAsnArgThrAsn-95
121-GlyAspValThrGluPhe-126
206-AlaValAsnSerLeuValGlnAlaValAsp-215

Antigenic Index - Jameson-Wolf

21-AlaThrGluSerSerArgSerLeuGluValGluLysValAlaSer-35
51-ThrPheAspAsnArgSerSerPhe-58
62-IlePheSerAspGlyGluAspArgLeuGlySerGlnAla-74
83-GlnGlnThrAsnArgPheAsnValLeuAsnArgThrAsn-95
99-LeuLysGlnGluSerGlyIleSerGlyLysAlaHisAsnLeuLysGlyAlaAspTyr-117
121-GlyAspValThrGluPheGlyArgArgAspValGlyAsp-133
140-LeuGlyArgGlyLysSerGlnIle-147
160-AsnThrSerGluIle-164
169-GlnGlyAlaGlyGlu-173
175-AlaLeuSerAsnArgGluIle-181
185-GlyGlyThrSerGlyTyrAspAlaThrLeuAsnGlyLysValLeu-199
214-ValAspAsnGlyAlaTrpGlnProAsnArg-223

Hydrophilic Regions - Hopp-Woods

21-AlaThrGluSerSerArgSerLeuGluValGluLysValAla-34
52-PheAspAsnArgSerSerPhe-58
62-IlePheSerAspGlyGluAspArgLeuGlySerGlnAla-74
99-LeuLysGlnGluSerGlyIleSerGlyLysAlaHisAsn-111
122-AspValThrGluPheGlyArgArgAspValGlyAsp-133
141-GlyArgGlyLysSer-145
176-LeuSerAsnArgGluIle-181

a235**AMPHI Regions - AMPHI**

8-LeuAlaAlaValLeuAlaLeu-14
18-GlnValGlnLysAlaProAsp-24
86-LeuThrAsnAlaAlaAspIle-92
95-ValArgProGluLysLeuHisGlnIlePhe-104
120-SerTyrGlnIleLeuAspSerValThrThr-129
165-GlyAlaLeuValSerAlaValValAsnGlnIleAlaAsnSerLeuThr-180
187-SerLysThrAlaAlaTyrAsnLeuLeuSerProTyr-198

Antigenic Index - Jameson-Wolf

20-GlnLysAlaProAspPheAspTyrThrSerPheLysGluSerLysProAla-36
43-ProLeuAsnGluSerProAspValAsnGlyThr-53
62-AlaProLeuSerGlu-66
79-GluThrPheLysGlnAsnGlyLeuThrAsn-88
93-HisAlaValArgProGluLysLeu-100
131-SerAlaLysAlaArgLeuValAspSerArgAsnGlyLysGluLeuTrpSerGlySerAlaSerIleArgGlu
GlySerAsnAsnSerAsnSer-161
178-SerLeuThrAspArgGlyTyrGlnValSerLysThrAla-190
202-GlyIleLeuLysGlyProArgPheValGluGluGlnProLys-215

Hydrophilic Regions - Hopp-Woods

20-GlnLysAlaProAspPheAsp-26

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29-SerPheLysGluSerLysPro-35
 44-LeuAsnGluSerProAspVal-50
 93-HisAlaValArgProGluLysLeu-100
 131-SerAlaLysAlaArgLeuValAspSerArgAsnGlyLysGluLeuTrp-146
 150-AlaSerIleArgGluGlySerAsnAsnSer-159
 179-LeuThrAspArgGlyTyrGln-185
 207-ProArgPheValGluGluGlnProLys-215
a236

AMPHI Regions - AMPHI

11-LeuCysThrAlaPheAlaAspGlyPhe-19
 107-PheAlaGlyPheAlaAspCysArgProPhe-116
 145-AlaAspAspValProArgPhePheAlaGlyGlu-155
 168-ArgAspValValGlnGlyGlyLeu-175
 215-ValGluGlyIleThrArgIle-221
 245-IleArgLeuLeuHisGlyIlePheAsnArgIleGluValAla-258
 316-ValAlaAspGlyPheArgHisPhe-323

Antigenic Index - Jameson-Wolf

42-GlyPheSerGlyAsnGlyLysPhe-49
 58-ArgHisGlnGlnSerLysAlaGln-65
 77-PhePheArgArgGlyAsnPheGlyPheGlyLeuGlnGlyArgThrAspGlyPhe-94
 98-GlnArgLeuAspGlyGlyGlyTyr-105
 109-GlyPheAlaAspCysArgProPhe-116
 126-ValAspGlyArgGluLeuValProSerMetGluLys-137
 144-AlaAlaAspAspValPro-149
 155-GluAlaGlnAsnArgCysAsnGlnGluAsnGlnAlaAlaArgAspValValGlnGlyGlyLeu-175
 195-IleGluValGluArgAlaGlnValPheArgAlaGluArgAsnHis-209
 213-GlyLysValGluGlyIleThrArg-220
 222-LysIleThrGlyAsnAlaPheLeu-229
 261-GlyLysGlnLysAlaGlnGly-267
 292-IleGlyGlyCysArgProGlnAlaGlnAspValArgAla-304
 310-PheLeuArgArgAspAspValAlaAspGly-319

Hydrophilic Regions - Hopp-Woods

89-GlyArgThrAspGly-93
 98-GlnArgLeuAspGlyGlyGly-104
 127-AspGlyArgGluLeuValProSerMetGluLys-137
 144-AlaAlaAspAspValPro-149
 156-AlaGlnAsnArgCysAsnGlnGluAsnGlnAlaAlaArgAspValVal-171
 195-IleGluValGluArgAlaGlnValPheArgAlaGluArgAsnHis-209
 214-LysValGluGlyIleThrArg-220
 261-GlyLysGlnLysAlaGlnGly-267
 295-CysArgProGlnAlaGlnAspValArgAla-304
 311-LeuArgArgAspAspValAlaAspGly-319

a239**AMPHI Regions - AMPHI**

49-PheArgLeuIleGlnSerCys-55
 72-AsnAlaHisArgLysGln-77
 123-ProGlyPheAsnAlaLeuProAlaIlePhe-132
 165-SerSerAsnGluTrp-169
 221-PheCysAlaThrIleCysAlaSerLeuArg-230

Antigenic Index - Jameson-Wolf

6-GlyIleAlaArgAsnArgArgMetGlu-14
 19-CysArgArgProAspArgPheValValArgGlnThrArgLeuLeu-33

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52-IleGlnSerCysGluValGluPro-59
 66-HisAsnGlyLysSerGlyAsnAlaHisArgLysGlnGlnLysGluIle-81
 100-ProAlaValArgSerAlaThrArgLysThrAla-110
 132-PheArgGlyGlySerGlyLysSerAlaSer-141
 144-AlaAlaGlnArgGlyArgGlyAlaCys-152
 164-ArgSerSerAsnGluTrpLys-170
 173-ThrAlaLysArgProProSerPheArgArgHisMetThrCysGlyAsnThrAlaProThrSerSerSerSer
 ArgLeuIleLys-200
 209-ValAlaGlySerCysProArgSerArgValArgThr-220
 248-TrpArgLeuAsnArgSerSerPro-255

Hydrophilic Regions - Hopp-Woods

6-GlyIleAlaArgAsnArgMetGlu4
 20-ArgArgProAspArgPheValValArgGlnThrArg-31
 67-AsnGlyLysSerGlyAsnAlaHisArgLysGlnGlnLysGluIle-81
 102-ValArgSerAlaThrArgLysThrAla-110
 135-GlySerGlyLysSerAlaSer-141
 146-GlnArgGlyArgGlyAlaCys-152
 165-SerSerAsnGluTrpLys-170
 173-ThrAlaLysArgProProSerPheArgArgHisMet-184
 193-SerSerSerSerArgLeuIleLys-200
 211-GlySerCysProArgSerArgValArgThr-220
 251-AsnArgSerSerPro-255

a240**AMPHI Regions - AMPHI**

19-AlaAspValGlyArgPheLeuHis-26
 63-IleGlnCysLeuArgAsnHis-69
 87-AlaProLeuPheAlaValCysPro-94
 107-GlnGlyGluAspPheProArgAlaGlyIleGlnAsnHis-119
 154-ValPheArgGlyPheIleAlaArgGlyValGlnAlaValHisAsn-168
 188-PheLysArgLysPheGln-193

Antigenic Index - Jameson-Wolf

9-GlyThrGluThrArgArgGlnPheAla-17
 39-IleAlaHisGlyArgArgSerAspPheIleArg-49
 67-ArgAsnHisLysArgPheAspCysArgThrGlyPheAsp-79
 101-ValGlyGlyArgIleGlyGlnGlyGluAspPheProArgAlaGlyIleGlnAsnHisHisArgSerGly-12
 3
 139-GlnGlyLeuAsnProLeuIleGluGlyLysAspAspVal-151
 173-ValProGlnAsnAspPheArg-179
 187-ValPheLysArgLysPhe-192
 201-AsnIleGlyLysSerAspAspValCysLys-210

Hydrophilic Regions - Hopp-Woods

10-ThrGluThrArgArgGlnPheAla-17
 41-HisGlyArgArgSerAspPheIleArg-49
 67-ArgAsnHisLysArgPheAspCys-74
 105-IleGlyGlnGlyGluAspPheProArg-113
 145-IleGluGlyLysAspAspVal-151
 187-ValPheLysArgLysPhe-192
 203-GlyLysSerAspAspValCysLys-210

a241-1**AMPHI Regions - AMPHI**

6-ThrArgAlaAlaLysHis-11
 35-ThrHisThrProHisGluProAlaSerSer-44

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71-LysMetProSerGluMetGluGlnThrLeu-80
 109-PheLeuIleGlyCysIleAlaHisThrPheAsnArgSerLeuLys-123
 126-PheHisAlaCysGlnArgMetValAlaVal-135
 195-HisIleAspArgIleAlaGlyIleLeuThrValGln-206
 229-PheValGlnLysLeuIleValGlyIleIleHis-239

Antigenic Index - Jameson-Wolf

1-MetProThrArgProThrArgAlaAlaLysHisProThrProProThrTrp-17
 23-CysProArgProProTyrArgProProSerValGlnThrHisThrProHisGluProAlaSerSerThrCysAlaAlaLysSerAlaAsnArgArgGluAsnPheHis-58
 68-ProSerAsnLysMetProSerGluMetGluGlnThrLeuPheArgArgHisGlnIleProProSerCysArgGlnSer-93
 119-AsnArgSerLeuLysAlaAspPhe-126
 147-ThrIleAspAspAsnIleAla-153
 166-PheAspPheAsnArgGluHisAlaArg-174
 176-PheAsnThrAspGlnLeu181
 188-ArgIleValGlyArgLysArgHisIleAspArgIleAla-200
 209-PheHisGlnArgGluAsnAla-215
 244-ArgAsnHisGlyIle-248
 251-AspSerHisIleCysProPheArgAsnSerArgLeuIle-263

Hydrophilic Regions - Hopp-Woods

1-MetProThrArgProThrArgAlaAlaLysHisProThr-13
 37-ThrProHisGluProAlaSer-43
 46-CysAlaAlaLysSerAlaAsnArgArgGluAsnPheHis-58
 70-AsnLysMetProSerGluMetGluGlnThrLeuPheArg-82
 120-ArgSerLeuLysAlaAspPhe-126
 166-PheAspPheAsnArgGluHisAlaArg-174
 188-ArgIleValGlyArgLysArgHisIleAspArgIleAla-200
 209-PheHisGlnArgGluAsnAla-215

a242**AMPHI Regions - AMPHI**

23-ProGluValAlaXxxGlnPheValAspPheValGlu-34
 43-GlyPheCysHisIleLeuGlnAsnLeuThrGly-53
 122-AsnProPhePheAspPhePheGlnAlaValVal-132
 137-HisGlnSerGlyPheGlyAspValPhe-145
 156-PheGluGlnGlyVal-160
 191-PheGlyHisThrArgLeuPheAspIleCys-200
 262-HisProPheAlaAspPheGlyAsnPheGlnAsnLeuLeuAlaLeu-276

Antigenic Index - Jameson-Wolf

13-HisPheGluGlnArgAlaGlyGlyIleAla-22
 52-ThrGlyHisGlyAla-56
 75-SerHisAlaAspIlePheProProArgCysPheGlyAspGlyPheAlaGlnArgGlyPhe-94
 98-TrpArgAlaAspGlnAlaGlnAsnArgAla-107
 137-HisGlnSerGlyPhe-141
 152-LeuProArgGlnPheGluGlnGlyVal-160
 164-AlaTyrAspGlyGlyPheGlyArgHisArgArgHisHis-176
 283-MetArgCysAspArgIleGly-289

Hydrophilic Regions - Hopp-Woods

13-HisPheGluGlnArgAlaGlyGlyIle-21
 98-TrpArgAlaAspGlnAlaGlnAsnArgAla-107
 155-GlnPheGluGlnGlyVal-160
 168-GlyPheGlyArgHisArgArgHisHis-176

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283-MetArgCysAspArgIleGly-289

a243**AMPHI Regions** - AMPHI

25-IlePheSerMetLeu-29

35-IleThrArgLeuAlaArgLysAlaValGlnArgLeuThrAlaSerHisIleGlnArgPheLeu-55

80-AspSerSerArgIleThrSerThrIleSerSer-90

Antigenic Index - Jameson-Wolf

29-LeuProSerAsnAlaPro-34

37-ArgLeuAlaArgLysAlaValGln-44

55-LeuThrGluSerLysThrGlyAlaAsnLysSerSerSerSerCysLysPro-71

77-SerAlaSerAspSerSerArgIle-84

102-SerThrThrGlyAlaValThrLysSer-110

Hydrophilic Regions - Hopp-Woods

37-ArgLeuAlaArgLysAlaValGln-44

55-LeuThrGluSerLysThrGlyAlaAsnLysSerSerSerSerCysLys-70

78-AlaSerAspSerSerArgIle-84

a244-1**AMPHI Regions** - AMPHI

13-IleAlaAlaLeuLeuArg-18

24-AsnAlaLeuGlnGluIleAsnGlnIleIleProGlnThr-36

72-PheAlaCysHisArgLeuHisArgLeu-80

102-LysCysPheLeuGlnLeuValGln-109

111-HisLeuHisAlaHis-115

189-IleSerArgLeuCysGlySerLeuPhe-197

206-CysLeuAspGlyPheHisArgLeuHis-214

217-AsnArgPhePheThr-221

245-TyrProArgLysIleArgThrPheSerArgAsnPheLysGlnArg-259

Antigenic Index - Jameson-Wolf

1-MetProSerGluAlaArgGlnAlaGlySerAspGly-12

20-ValTyrThrGlnAsnAla-25

35-GlnThrProSerGly-39

44-HisArgAsnHisSerArgAlaGlnHis-52

81-MetAspIleArgIle-85

91-PheArgIleAspPheLeuAsp-97

125-IleGlnLysArgHis-129

134-LeuAspArgGlnHisPheHisGlyLysLeuLeuSerGlyGluLeuValArg-150

179-GlnLeuGlyAsnProArgLeu-185

234-LeuLysThrAsnTrpLysSerLysSerSerTyrTyrProArgLysIleArgThrPheSerArgAsnPheLys

GlnArgGlnArgIleSerAsnSerPheSerAsnProLeuProLysLys-273

Hydrophilic Regions - Hopp-Woods

1-MetProSerGluAlaArgGlnAlaGlySerAspGly-12

46-AsnHisSerArgAlaGlnHis-52

81-MetAspIleArgIle-85

91-PheArgIleAspPheLeuAsp-97

236-ThrAsnTrpLysSerLysSer-242

247-ArgLysIleArgThrPheSerArgAsnPheLysGlnArgGlnArgIle-262

a246-2**AMPHI Regions** - AMPHI

39-AlaValAsnIleAlaGlnCysPheThr-47

60-ArgCysAlaGluValLeuValGluGlnPheAlaAsnLeuPhePhe-74

83-AspMetGlyArgPhe-87

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132-PheGlyCysAspAspValValAspAspPheAlaGlyPheGlyArgCysPheArgProVal-151
 156-GlnLeuGlyGlnValPhePheGln-163

Antigenic Index - Jameson-Wolf

1-MetHisGlyArgAsnGlyGlyThrGln-9
 18-GlnThrGlnArgThrCysPheSerAsnGlyGluValHisAlaThrGlnThrAspIleGlySer-38
 78-AspCysGlyHisHisAspMetGlyArg-86
 92-LeuAspAspGluLeuAla-97
 133-GlyCysAspAspValValAspAspPheAlaGlyPheGlyArgCysPheArg-149
 166-GlnGlnGlyArgGlnPheArgGln-173

Hydrophilic Regions - Hopp-Woods

1-MetHisGlyArgAsnGlyGly-7
 92-LeuAspAspGluLeuAla-97
 136-AspValValAspAsp-140
 169-ArgGlnPheArgGln-173
a247-1

AMPHI Regions - AMPHI

44-ValValSerSerCysSerLysIleAlaLysProGlyLysLysIleSerThrLeuGlnGlu-63
 153-PheAspSerSerThr-157

Antigenic Index - Jameson-Wolf

11-GluSerThrAspIleLysTyrProGly-19
 33-IleAspAspLeuAspAlaSerAla-40
 47-SerCysSerLysIleAlaLysProGlyLysLysIleSerThrLeuGlnGluAlaLysSer-66
 70-IleThrAsnAspAspLysGlnAsnGlyAsnIleThrArgGlnArgHis-85
 95-IleAlaGlyGluGluGlyLeu-101
 104-PheGlnLeuAspAspLysGlyLysTrpGlyAsn-114
 120-LysLysIleArgHisMetLys-126
 133-SerAspCysProGluAspAspAlaGlyLysGluGluLysPheLysTyrThrGlyThrPheAspSerSerThrAsnAla-159
 171-SerGlyThrAspThrLysIleAlaAlaSerSerAspAsnHis-184
 192-AlaThrIleArgGlyGlyAsnValCysAlaAsnArgThrLeu-205

Hydrophilic Regions - Hopp-Woods

11-GluSerThrAspIleLys-16
 33-IleAspAspLeuAspAlaSerAla-40
 49-SerLysIleAlaLysProGlyLysLysIleSerThr-60
 62-GlnGluAlaLysSer-66
 71-ThrAsnAspAspLysGlnAsnGlyAsnIleThrArgGlnArgHis-85
 95-IleAlaGlyGluGluGlyLeu-101
 105-GlnLeuAspAspLysGlyLysTrpGly-113
 120-LysLysIleArgHisMetLys-126
 134-AspCysProGluAspAspAlaGlyLysGluGluLysPheLysTyr-149
 153-PheAspSerSerThr-157
 172-GlyThrAspThrLysIleAlaAlaSerSerAsp-182
a248-1

AMPHI Regions - AMPHI

88-GluAsnCysGlyLysGlyLeu-94
 121-ValGluAlaValLysArg-126
 148-ThrGlnSerValSerLysMetProArgTyrIleIleGlu-160
 168-GluAsnValTyrArgValThrAlaLysAlaTrpGlyLysAsn-181

Antigenic Index - Jameson-Wolf

1-MetArgLysGlnAsnThrLeuThr-8

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11-ProThrSerAspGlyGlnArgGly-18
 40-GlnSerTyrAsnThrGluGlnArgIleSerAlaAsnGluSerAspArgLysLeuAla-58
 64-AlaAlaLeuArgGluGlyGluLeuGln-72
 76-LeuGluTyrAspThrAspSerLysValThrPheSerGluAsnCysGlyLysGlyLeu-94
 99-AsnValArgThrAsnAsnAspAsnGluGluAlaPhe-110
 116-GlnGlyLysProThrValGluAlaValLysArgSerCysThrAlaLysSerThrGlyLeu-135
 137-IleAspAsnLysGlyMetGluTyrLysLysGlyThrGlnSerValSerLysMetProArgTyr-157
 162-LeuGlyValLysAsnGlyGluAsnValTyr-171
 177-AlaTrpGlyLysAsnAlaAsnThr-184
 192-ValSerAsnAspGlu-197

Hydrophilic Regions - Hopp-Woods

1-MetArgLysGlnAsnThr-6
 11-ProThrSerAspGlyGlnArg-17
 42-TyrAsnThrGluGlnArgIleSerAlaAsnGluSerAspArgLysLeuAla-58
 64-AlaAlaLeuArgGluGlyGluLeuGln-72
 76-LeuGluTyrAspThrAspSerLysValThrPhe-85
 101-ArgThrAsnAsnAspAsnGluGluAlaPhe-110
 119-ProThrValGluAlaValLysArgSerCysThrAlaLysSer-132
 137-IleAspAsnLysGlyMetGluTyrLysLysGlyThrGlnSerValSerLysMetPro-155
 165-LysAsnGlyGluAsnValTyr-171
 193-SerAsnAspGlu-197

a249-1**AMPHI Regions - AMPHI**

5-CysPheArgLeuLys-10
 15-GlyMetAlaLeuIleGluValLeuVal-23
 42-ThrValAlaSerValArgGluAla-49
 53-ThrIleValSerGlnIleThrGlnAsnLeuMetGluGlyMet-66

Antigenic Index - Jameson-Wolf

1-MetLysAsnAsnAspCysPheArgLeuLysAsnProGlnSerGly-15
 44-AlaSerValArgGluAlaGluThr-51
 70-ProThrIleAspSerAspSerAsnLysLysAsnTyr-81
 94-ValAspGlyAspPheGln-99
 102-AlaIleLysThrLysThrGlnLeuAla-110
 135-ValCysLysAspSerSerGlyValAla-143
 154-SerAsnCysAspGlySerAlaAsnGlyAspThrLeu-165
 173-AspSerAlaGlyAspSerAspIleAlaArgThrAsnLeuGluThrAsnGlyAsnAsn-191
 198-AlaArgValGlyGlyArgGlu-204

Hydrophilic Regions - Hopp-Woods

1-MetLysAsnAsnAspCysPheArgLeuLysAsnProGln-13
 44-AlaSerValArgGluAlaGluThr-51
 72-IleAspSerAspSerAsnLysLysAsn-80
 94-ValAspGlyAspPheGln-99
 102-AlaIleLysThrLysThrGlnLeuAla-110
 135-ValCysLysAspSerSerGly-141
 155-AsnCysAspGlySerAlaAsnGly-162
 174-SerAlaGlyAspSerAspIleAlaArgThrAsnLeuGluThrAsnGly-189
 200-ValGlyGlyArgGlu-204

a250**AMPHI Regions - AMPHI**

8-ArgAsnGluPheIleArgGlyIleLysGlu-17
 54-PheAlaGlyGlySerGlu-59
 61-AlaThrValAsnLeuTrpAlaGluPro-69

Antigenic Index - Jameson-Wolf

5-SerSerProArgAsnGluPheIleArgGlyIleLysGluSerSer-19
 34-MetGlnGlyGlyGlnLysGlyMetSer-42
 54-PheAlaGlyGlySerGlu-59
 90-GlyxxxGlyThrCysProAlaProGluArgAsnThrAlaGluLysSerArgAlaArg-108

Hydrophilic Regions - Hopp-Woods

5-SerSerProArgAsnGluPheIleArgGlyIleLysGluSerSer-19
 95-ProAlaProGluArgAsnThrAlaGluLysSerArgAlaArg-108

a251**AMPHI Regions - AMPHI**

47-GlnAlaAlaAspLeuProArgAsnHisIleSerProAlaTyr-60
 81-ArgArgIleGlyAla-85
 110-GlnValValAlaAspPheGlyGlyIleGluGlyPhe-121
 156-ArgThrValGlyArgThrValArgLeuLeuLysMetIle-168
 211-AlaArgThrValPheArgAlaHis-218
 255-LeuGlyGlnGluCysArg-260
 262-ArgHisIleAlaArgValGluSerLeuLeuArgValPheGluTyrAlaAlaAsp-279

Antigenic Index - Jameson-Wolf

9-GlnProArgAlaAspIleArgProProAlaGlnThrAspIleValProAsnCys-26
 34-AspAlaAlaArgArgAlaValArg-41
 50-AspLeuProArgAsnHisIleSer-57
 74-GlyGlyPheArgGlyArgPheArgArg-82
 98-IleArgValLysAlaValLysThrGluIle-107
 145-ArgLeuValGlyThr-149
 157-ThrValGlyArgThrValArg-163
 175-ProValValArgGluAlaGly-181
 208-ValLysHisAlaArgThrValPhe-215
 251-IleLysAsnArgLeuGlyGlnGluCysArgAsnArgHisIleAlaArgValGluSer-269
 286-LysThrLysThrArgAlaGluGlnProArgSerAla-297

Hydrophilic Regions - Hopp-Woods

10-ProArgAlaAspIleArgProProAlaGln-19
 34-AspAlaAlaArgArgAlaValArg-41
 76-PheArgGlyArgPheArgArg-82
 98-IleArgValLysAlaValLysThrGluIle-107
 157-ThrValGlyArgThrValArg-163
 175-ProValValArgGluAlaGly-181
 208-ValLysHisAlaArgThrValPhe-215
 253-AsnArgLeuGlyGlnGluCysArgAsnArgHisIleAlaArgValGluSer-269
 287-ThrLysThrArgAlaGluGlnProArg-295

a254**AMPHI Regions - AMPHI**

6-ArgPheAsnThrTyrSerHis-12
 32-GlyHisGlyAspGlyTyrArg-38
 66-LysLeuLysSerIleLeuLys-72
 142-ValLeuAlaValMetLysSerLeuThrAlaSer-152

Antigenic Index - Jameson-Wolf

2-TyrThrGlyGluArgPheAsnThrTyrSer-11
 32-GlyHisGlyAspGlyTyrArg-38
 65-GlyLysLeuLysSerIleLeuLysLysThrAspHis-76
 94-SerLeuArgAsnGlyProGly-100

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120-ThrIleGlyArgLysSerGluLysArgLeuLeu-130

177-AsnAspGluLysIleArgHisGlyHisGly-186

Hydrophilic Regions - Hopp-Woods

65-GlyLysLeuLysSerIleLeuLysLysThrAspHis-76

120-ThrIleGlyArgLysSerGluLysArgLeuLeu-130

177-AsnAspGluLysIleArgHis-183

a255**AMPHI Regions - AMPHI**

23-ValLysThrCysAlaAspPheHisAlaPheAspGlyValAspAlaHisHisGly-40

71-GlyIleGlnGlyPheAlaHis-77

139-AlaGlyGlyGlyPhe-143

Antigenic Index - Jameson-Wolf

40-GlyValGlyAspPheGly-45

54-AlaGlnAlaAspGlyAspValGlyGly-62

67-LeuArgAlaAspGlyIleGln-73

91-ValGlyGlyLysLysArgIleLeu-98

115-GlyAsnValGlyGlyAspPheArgAla-123

130-PhePheGlyAsnGlySerGlyGlyAsnAlaGly-140

145-GlyGlyThrProAla-149

Hydrophilic Regions - Hopp-Woods

56-AlaAspGlyAspVal-60

67-LeuArgAlaAspGly-71

92-GlyGlyLysLysArgIleLeu-98

119-GlyAspPheArgAla-123

a256-1**AMPHI Regions - AMPHI**

90-GlyValValValHisPheArgSerCysGlyGlyValAla-102

127-ArgTyrArgGluIleTyrAlaVal-134

141-AsnAlaLeuAlaLysTyrLeuGlyGluGln-150

174-ArgPheAspSerGlyIleThrArgLeuLeu-183

197-ArgSerLeuGlnGlyPheGlnThrAla-205

207-AlaAlaGlyCysLysThrLeuGlyGluPheAspAspArgPheThrAlaProLeuHisGly-226

233-TyrTyrArgGlnThrSerCysLysProLeuLeuLysHisValAla-247

267-ProArgAlaAspGluValSer-273

Antigenic Index - Jameson-Wolf

4-ThrProProAspThrProPhe-10

12-LeuArgAsnGlyAsnAlaAspThrIleAla-21

24-PheLeuGlnArgSerAlaProAlaTyrArgArgGluLeuLeuProAspSerThrGlyLysThrLysThrAlaTyrAspPheSerAspGlyIleSerProAspAla-58

67-LeuGluGlyGlySerGlySer-73

82-AlaValArgAspArgGlyTrpAsn-89

97-SerCysGlyGlyValAlaAsn-103

112-GlyAspThrAlaGlu-116

124-LeuAlaAlaArgTyrArgGlu-130

147-LeuGlyGluGlnGlyGluAsnAlaLeu-155

166-ValAspAlaGluAlaAlaGlyAsnArgPheAspSerGlyIle-179

192-LeuIleProLysAlaArgSerLeuGln-200

212-ThrLeuGlyGluPheAspAspArgPheThr-221

227-PheAlaAspArgHisAspTyrTyrArgGlnThrSerCysLysProLeuLeu-243

259-ProPheLeuProProGluAlaLeuProArgAlaAspGluValSerGlu-274

292-SerThrGlyGlyArgLeu-297

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311-AspSerPheArgThrAsnArgArg-318

Hydrophilic Regions - Hopp-Woods

28-SerAlaProAlaTyrArgArgGluLeuLeuPro-38
 40-SerThrGlyLysThrLysThr-46
 83-ValArgAspArgGlyTrp-88
 124-LeuAlaAlaArgTyrArgGlu-130
 147-LeuGlyGluGlnGlyGluAsnAlaLeu-155
 166-ValAspAlaGluAlaAlaGlyAsnArgPheAspSerGlyIle-179
 192-LeuIleProLysAlaArgSer-198
 212-ThrLeuGlyGluPheAspAspArgPheThr-221
 227-PheAlaAspArgHisAspTyrTyrArg-235
 265-AlaLeuProArgAlaAspGluValSerGlu-274
 313-PheArgThrAsnArgArg-318

a257**AMPHI Regions - AMPHI**

24-SerPheLeuProAsn-28
 73-AspLeuValAsnLysValLeuAlaGluValAlaArgLeuGluLysMetPhe-89
 109-SerProProAlaAspPheLeuGluLeuLeuSerLeuAlaValIlePheThr-125

Antigenic Index - Jameson-Wolf

1-MetGlyArgHisPheGlyArgArgArgPhe-10
 31-AlaAlaAspAspGluLysArgAsnLysAspGluLysArgAsnGluAsn-46
 56-GlySerGlyAlaGlu-60
 65-GlyValAspAspArgArgAlaAlaAspLeuVal-75
 83-AlaArgLeuGluLys-87
 92-TyrArgGluAspSerLeuIleSerArgLeuAsnArgAspGlyTyrLeuThrSerProProAlaAspPhe-114

Hydrophilic Regions - Hopp-Woods

4-HisPheGlyArgArgArgPhe-10
 31-AlaAlaAspAspGluLysArgAsnLysAspGluLysArgAsnGlu-45
 65-GlyValAspAspArgArgAlaAlaAspLeuVal-75
 83-AlaArgLeuGluLys-87
 92-TyrArgGluAspSerLeuIle-98
 100-ArgLeuAsnArgAspGlyTyr-106

a259-1**AMPHI Regions - AMPHI**

154-TyrGlyArgValPheAlaAspIlePheGluLeuSer-165
 172-AlaPheLysGlyMetLeuLysLeuThrAlaGluTyrLysAsnIlePheGlyAspAlaCysArg-192
 203-AsnGlnAlaLeuGlnGluIleSerLysThrSerGlu-214

Antigenic Index - Jameson-Wolf

34-LysAlaTyrThrGluGluLeuProPro-42
 61-SerAlaArgSerLysAlaLysAlaGluLysPheTyrArgGluLysMetIleGln-78
 93-LeuGluHisLysPro-97
 105-LysAsnHisGlyLysGlyMetAlaGluGlnValArgPheLysAla-119
 121-ValLeuProAspAspGluAspAlaArgThrIleAla-132
 144-GlyThrAspAlaValAlaSerGlyGluThrTyrGlyArgVal-157
 168-LeuGluGlyArgAlaPhe-173
 189-AspAlaCysArgSerGluThrAlaLeu-197
 208-GluIleSerLysThrSerGluLysSerLysArg-218

Hydrophilic Regions - Hopp-Woods

35-AlaTyrThrGluGluLeuPro-41
 62-AlaArgSerLysAlaLysAlaGluLysPheTyrArgGluLysMetIleGln-78

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93-LeuGluHisLysPro-97
 106-AsnHisGlyLysGlyMetAlaGluGlnValArgPheLysAla-119
 121-ValLeuProAspAspGluAspAlaArgThrIleAla-132
 168-LeuGluGlyArgAlaPhe-173
 189-AspAlaCysArgSerGluThrAlaLeu-197
 208-GluIleSerLysThrSerGluLysSerLysArg-218
a260
AMPHI Regions - AMPHI
 12-ProPheSerSerLeuPheArgAlaLeuPhe-21
 53-PheIleAspSerValGlyGlnValAlaAlaArgLeuPheGlnAlaPhe-68
 154-ValGlnIleAsnGlnValGlyIleValAspLeuIlePro-166
 176-AlaThrGlyCysThrGlyIleCysProLysCysProThrGlyCysArgPro-192

Antigenic Index - Jameson-Wolf

20-LeuPheGluAspArgValGlyIle-27
 30-GlyAlaHisAspAlaAlaGlu-36
 38-AspPheLeuProGluGluPheThrArg-46
 80-ProAlaPheArgAlaArgGluGlnAlaArgArgGlySerGly-93
 96-AlaGlyAsnAspLeuArgValProHisLysAspAlaValGluValAspIleAspGlyGlyAsnThrVal-118
 126-ThrHisPheAspAspGlyAspAla-133
 139-AlaGluAlaArgPhe-143
 184-ProLysCysProThrGlyCysArgProVal-193

Hydrophilic Regions - Hopp-Woods

20-LeuPheGluAspArgValGlyIle-27
 30-GlyAlaHisAspAlaAlaGlu-36
 82-PheArgAlaArgGluGlnAlaArgArgGlySer-92
 98-AsnAspLeuArgValProHisLysAspAlaValGluValAspIleAspGly-114
 127-HisPheAspAspGlyAspAla-133
 139-AlaGluAlaArgPhe-143
 186-CysProThrGlyCysArgProVal-193
a261

AMPHI Regions - AMPHI

22-GlnIlePheArgGln-26
 32-AspThrAlaArgAlaPheAlaAlaAla-40
 50-GlyLeuLeuAlaAspIleVal-56
 92-ValHisGlyPheAspLysHis-98
 137-AlaValTyrLysGlyIleArgAsnAlaValPhe-147
 158-GlnGlyIleValArgAsnLeu-164
 203-AspValPheAlaProVal-208
 212-CysLeuAsnGlnAlaGlyGly-218

Antigenic Index - Jameson-Wolf

40-AlaAlaAspAspAlaVal-45
 60-HisPheValArgGlnArgProSerLeuArgLeu-70
 74-HisGlnArgArgValAspLeu-80
 86-ArgGlnIleLysGlyAsnValHisGlyPheAspLysHisVal-99
 111-AlaHisAlaArgAspAspValProTyr-119
 126-AsnArgGlyIleGluGlnGluLysArgVal-135
 149-SerPheAspGlyGlyGly-154
 181-ArgAsnProAlaGly-185
 197-LeuGluSerAsnGlyLeuAsp-203
 214-AsnGlnAlaGlyGlyArgIleLeuThrAlaArgLysAspAspGlnGlyPhe-230

Hydrophilic Regions - Hopp-Woods

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40-AlaAlaAspAspAlaVal-45
 60-HisPheValArgGlnArgProSerLeu-68
 74-HisGlnArgArgValAspLeu-80
 94-GlyPheAspLysHisVal-99
 112-HisAlaArgAspAspValPro-118
 127-ArgGlyIleGluGlnGluLysArgVal-135
 221-LeuThrAlaArgLysAspAspGlnGly-229

a263**AMPHI Regions - AMPHI**

32-AsnLeuIleGlyValLeuSerAsnAla-40
 42-GluAlaLeuAlaPheTyrGlnGluValGlyLysLeuAsnAlaAlaAsnSerLeuThr-60
 86-LysLeuAlaThrLeuLysLys-92
 100-LysAlaAlaArgAlaLeuAlaAlaGlyGlu-109
 115-LeuGlyAlaLeuAlaAlaPheThrGln-123
 135-GluGluLeuLysAlaPhePheAspAla-143
 157-ValAlaLeuAlaThrLeuCysAsnTyrValAsnAsnLeuGly-170

Antigenic Index - Jameson-Wolf

10-GluThrAlaProGluAlaAlaLysAlaArgValGluAla-22
 37-LeuSerAsnAlaPro-41
 72-AlaArgThrAsnGlnCysGly-78
 97-GlnSerValLysAlaAlaArg-103
 108-GlyGluPheAspAspAlaLysLeu-115
 126-MetAlaLysLysGlyAlaValSerAspGluGluLeuLysAla-139
 170-GlyGlnThrGluIleAsnProGluLeu-178

Hydrophilic Regions - Hopp-Woods

11-ThrAlaProGluAlaAlaLysAlaArgValGluAla-22
 97-GlnSerValLysAlaAlaArg-103
 108-GlyGluPheAspAspAlaLysLeu-115
 126-MetAlaLysLysGlyAlaValSerAspGluGluLeuLysAla-139

a264**AMPHI Regions - AMPHI**

55-ValAlaGluPheThrGlnThrGly-62
 96-IleProSerTyrValArgValThrAsnThrLys-106
 124-AsnArgIleIleAspValSer-130
 183-LeuAsnGlnAlaAlaGlnAsnLeuAlaSerSer-193

Antigenic Index - Jameson-Wolf

27-AlaValValArgAlaGluLysLeuHisAlaSerAlaAsnArgSerTyrLysValAlaGlyLysArgTyrThrProLysAsnGlnVal-55
 57-GluPheThrGlnThrGlyAsnAlaSerTrp-66
 68-GlyGlyArgPheHisGlyArgLysThrSerGlyGlyGluArgTyrAsp-83
 103-ThrAsnThrLysAsnGlyLysSerVal-111
 114-ArgValAsnAspArgGlyProPheHisGlyAsnArgIleIleAspValSerLysAlaAlaAla-134
 153-ValProGlyGlnSerAlaProValAlaGluAsnLysAspIlePheIle-168
 170-LeuLysSerPheGlyThrGluHisGluAla-179
 192-SerSerAlaSerAsnProAsnLeuSerValGluLysArgArgTyrGluTyr-208
 216-AlaSerGlnGluArgAlaAlaGluAlaGluAlaGlnAla-228

Hydrophilic Regions - Hopp-Woods

27-AlaValValArgAlaGluLysLeuHisAlaSerAlaAsnArgSerTyrLysValAlaGlyLysArgTyrThrPro-51
 71-PheHisGlyArgLysThrSerGlyGlyGluArgTyrAsp-83
 103-ThrAsnThrLysAsnGlyLys-109

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115-ValAsnAspArgGlyProPheHis-122
 125-ArgIleIleAspValSerLysAlaAlaAla-134
 159-ProValAlaGluAsnLysAspIlePheIle-168
 171-LysSerPheGlyThrGluHisGluAla-179
 199-LeuSerValGluLysArgArgTyrGluTyr-208
 216-AlaSerGlnGluArgAlaAlaGluAlaGlnAla-228

a266**Antigenic Index** - Jameson-Wolf

5-AsnAlaPheArgArgHisArgArgGlnCysProAsnArgLysProAlaMet-22
 51-ProLeuLysArgLysHisPhe-57
 80-SerArgAlaGlyAlaValHisAspGlnGlyTrpGlu-91
 114-TrpHisThrArgAsnArgGlu-120

Hydrophilic Regions - Hopp-Woods

5-AsnAlaPheArgArgHisArgArgGlnCysProAsnArgLysProAlaMet-22
 51-ProLeuLysArgLysHisPhe-57
 80-SerArgAlaGlyAlaValHis-86

a268-1**AMPHI Regions** - AMPHI

6-AspGlyLeuHisLysPheLysHisIleCysSerAlaAla-18
 22-IleLysGluProLeuAspLys-28
 52-GlnGluValAspArgValSerGluTrp-60
 70-GluPheGluGlnPheTrpLysGlyLeuProGlnThrValGlnAsn-84
 89-SerGlnLysThrTrpLysSerGlyMetAspLys-99
 110-GluThrProAsnGlyIleLys-116

Antigenic Index - Jameson-Wolf

1-ValGlnSerArgTyrAspGly-7
 21-LeuIleLysGluProLeuAspLysAlaLysGlnArgAsnGluGluLeuGluAlaAlaGluGluAlaAlaAla-44
 47-AlaLeuGlyArgGluGlnGluValAspArgValSerGluTrpGluGluArgTyrLysLeuSerArgSerGluPhe-71
 82-ValGlnAsnLysLeuGlnAlaSerGlnLysThrTrpLysSerGlyMetAspLysIleCysAlaAsnAsnAlaLysAlaGluGlyGluThrProAsnGly-114
 119-GluLeuAlaCysLysThrAlaGluThrGluAlaArgLeuGluGluLeuHisAsnArgLysLysAlaLeuLeuAspGluMetAlaArgGluAlaAspLysLysGluLeuProLysArgLeu-158

Hydrophilic Regions - Hopp-Woods

3-SerArgTyrAspGly-7
 21-LeuIleLysGluProLeuAspLysAlaLysGlnArgAsnGluGluLeuGluAlaAlaGluGluAlaAlaAla-44
 47-AlaLeuGlyArgGluGlnGluValAspArgValSerGluTrpGluGluArgTyrLysLeuSerArgSerGluPhe-71
 91-LysThrTrpLysSerGlyMetAspLysIleCys-101
 104-AsnAlaLysAlaGluGlyGluThrProAsn-113
 119-GluLeuAlaCysLysThrAlaGluThrGluAlaArgLeuGluGluLeuHisAsnArgLysLysAlaLeuLeuAspGluMetAlaArgGluAlaAspLysLysGluLeuProLysArgLeu-158

a269**AMPHI Regions** - AMPHI

54-TrpAspPheIleGlnAsnThr-60
 73-PheLysThrArgAlaLeuGlyArgPheSerSerPro-84

Antigenic Index - Jameson-Wolf

42-ProAlaSerSerAla-46
 60-ThrAlaSerProLysValSer-66

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73-PheLysThrArgAlaLeuGlyArgPheSerSerPro-84
 90-LeuSerGlyArgGlyValLysLysProLeu-99
 107-GlnValAspThrSerAla-112

Hydrophilic Regions - Hopp-Woods

61-AlaSerProLysVal-65
 73-PheLysThrArgAlaLeuGly-79
 93-ArgGlyValLysLysProLeu-99
a270

AMPHI Regions - AMPHI

41-AspLeuThrGluGlyCys-46
 49-ProAspGlySerArg-53
 100-GlnProSerGlyThrTrp-105

Antigenic Index - Jameson-Wolf

1-MetAsnLysAsnArgLysLeu-7
 41-AspLeuThrGluGlyCysThrLeuProAspGlySerArgValArgAlaAlaAlaValSerThrLysLysProPhe-65
 71-HisAlaProAlaGlyThrGlu-77
 86-LysAsnMetAspMetGlyPhe-92
 95-TyrMetPheGluArgGlnProSerGlyThr-104
 116-ValGluGlyArgArgAspPheThrAla-124
 128-IleGlySerArgThrPhe-133

Hydrophilic Regions - Hopp-Woods

1-MetAsnLysAsnArgLysLeu-7
 49-ProAspGlySerArgValArgAla-56
 60-SerThrLysLysProPhe-65
 73-ProAlaGlyThrGlu-77
 96-MetPheGluArgGlnPro-101
 116-ValGluGlyArgArgAspPheThrAla-124
a271-2

AMPHI Regions - AMPHI

6-MetAlaArgIleTrp-10
 20-SerProCysProAla-24
 29-ProLysSerLeuAlaLysCysAla-36

Antigenic Index - Jameson-Wolf

26-ThrThrLysProLysSerLeuAlaLys-34
 41-ArgSerAsnCysLeu-45
 60-CysSerSerThrThrGlyAlaProThrSerArg-70
 78-SerAlaSerIleAsnLysAspThrArgMetProAlaSerVal-91
 102-CysCysAlaAsnThrSerLysProProSer-111

Hydrophilic Regions - Hopp-Woods

27-ThrLysProLysSerLeuAla-33
 80-SerIleAsnLysAspThrArgMet-87
 105-AsnThrSerLysProPro-110
a272-2

AMPHI Regions - AMPHI

44-IleThrArgIleThrAspGlu-50
 70-AlaGluGluPheSerSerThrAsn-77
 106-PheArgAlaIleThrSer-111
 165-IleIleThrIleGluAspProIleGlu-173

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194-AsnTrpMetAlaAlaLeuLysAsnThrLeuArgGlnAla-206
 244-AsnGlnAlaLeuAspArgIleIleAsn-252
 307-GlyAsnIleHisGluIleLysGluValMetLys-317
 328-AspGlnHisLeuTyrGln-333
 343-GlnAspAlaLeuLysAsnAlaAspSer-351

Antigenic Index - Jameson-Wolf

2-PheThrAspGluAsnMetThrAlaLysGluGluLeu-13
 19-HisMetAsnLysAsnLysGlySerAsp-27
 38-MetLysLeuAspGlyLysIleThrArgIleThrAspGluProLeuThrAlaGluLysCysMet-58
 68-LysGlnAlaGluGluPheSerSerThrAsnGlu-78
 85-LeuProAspThrSerArgPheArgVal-93
 109-IleThrSerLysIleProLysPheGluSerLeuAsn-120
 128-ValAlaLeuLysLysArgGly-134
 142-ThrGlySerGlyLysSerThrSerLeu-150
 154-IleAspTyrArgAsnGluAsnSerPheGly-163
 168-IleGluAspProIle-172
 176-HisGluHisLysAsnCys-181
 184-ThrGlnArgGluValGlyValAspThrGluAsn-194
 199-LeuLysAsnThrLeuArgGlnAlaProAsp-208
 214-GluIleArgAspArgGluThrMet-221
 241-AsnSerThrAsnGlnAlaLeuAspArg-249
 254-PheProGluGluArgArgGluGlnLeuLeu-263
 278-LeuValProArgAspGlyGlyLysGlyArgValAlaAla-290
 310-HisGluIleLysGluValMetLysLysSerThr-320
 336-GluLysGlyGluIleSerLeu-342
 344-AspAlaLeuLysAsnAlaAspSerAlaHisAspLeu-355
 361-LeuArgSerArgGlnAlaGlnSerSerGlyProAspLeuGluLeuLeu-376

Hydrophilic Regions - Hopp-Woods

2-PheThrAspGluAsnMetThrAlaLysGluGluLeu-13
 20-MetAsnLysAsnLysGlySerAsp-27
 38-MetLysLeuAspGlyLysIleThrArgIleThrAspGluProLeuThrAlaGluLysCysMet-58
 68-LysGlnAlaGluGluPheSerSer-75
 87-AspThrSerArgPheArgVal-93
 112-LysIleProLysPheGluSer-118
 128-ValAlaLeuLysLysArgGly-134
 143-GlySerGlyLysSerThrSer-149
 155-AspTyrArgAsnGluAsnSer-161
 168-IleGluAspProIle-172
 176-HisGluHisLysAsn-180
 184-ThrGlnArgGluValGlyValAspThr-192
 201-AsnThrLeuArgGlnAlaPro-207
 214-GluIleArgAspArgGluThrMet-221
 245-GlnAlaLeuAspArg-249
 255-ProGluGluArgArgGluGlnLeuLeu-263
 278-LeuValProArgAspGlyGlyLysGlyArgValAlaAla-290
 310-HisGluIleLysGluValMetLysLysSerThr-320
 336-GluLysGlyGluIleSerLeu-342
 344-AspAlaLeuLysAsnAlaAspSerAlaHisAspLeu-355
 361-LeuArgSerArgGlnAlaGlnSerSerGlyProAspLeuGluLeu-375

a274**AMPHI Regions - AMPHI**

31-TyrLysAspGlyLys-35
 111-GluAlaValPheLysThrLeuSerPro-119

Antigenic Index - Jameson-Wolf

25-LeuValThrAspAspTyrTyrLysAspGlyLysHisIleAsp-38
 40-GlnLeuHisArgAspGluGluAlaValArgArgHisIle-52
 60-ProAspMetAsnAla-64
 71-GlyGluPheAspGlyLysGlnPro-78
 85-HisProThrArgLysAlaAspAspGlnThrVal-95
 99-ProValGlySerAlaGlnAsnGlyArgAlaGluTyr-110
 117-LeuSerProThrAsnHis-122
 126-ArgValGluAspAlaAlaGly-132
 136-ValGluAsnLysTrpIleThrSerGlnGlyAsnAlaValAspLeuThrProMetAspLysLeuPheAsnAsn
 ThrGluSerLys-163

Hydrophilic Regions - Hopp-Woods

29-AspTyrTyrLysAspGlyLysHisIleAsp-38
 40-GlnLeuHisArgAspGluGluAlaValArgArgHisIle-52
 72-GluPheAspGlyLysGln-77
 86-ProThrArgLysAlaAspAspGlnThrVal-95
 104-GlnAsnGlyArgAlaGluTyr-110
 126-ArgValGluAspAlaAlaGly-132
 151-ThrProMetAspLysLeuPheAsn-158
a276

AMPHI Regions - AMPHI

9-MetMetArgSerAlaProSerMetValValArgArgTrpAlaThrMetMet-25
 60-SerPheLysMetAlaArg-65
 80-ProPheAspProMetGlyTrp-86
 115-GlyArgLeuTyrArgThrPheSerAsn-123
 164-ThrLysArgGlySerArgLeu-170
 207-SerThrSerThrLeuArgLysLeuMetArgProSerThr-219

Antigenic Index - Jameson-Wolf

10-MetArgSerAlaProSerMetVal-17
 29-PheSerIleArgArgSerSerAlaCysTrpThrArgArgSerAspSerLeuSer-46
 52-SerSerAsnAsnAsnIle-57
 67-MetAlaThrArgCysArgCysProProAspLysLeuLeuPro-80
 82-AspProMetGlyTrp-86
 88-SerProSerGlyAspAlaSerIleArg-96
 103-TrpArgAlaAspArgThrSerAlaSerProAlaSerGlyArgLeuTyr-118
 121-PheSerAsnArgValSerSerAsnArgAsnThrSerTrpGluThrArgAlaAsnTrpAlaArgArgGlnSer
 SerLeu-146
 158-LeuProAlaAspGlySerThrLysArgGlySerArgLeuThrThr-172
 176-ProLeuProGluArgProThrArgAlaThrArgSerProCysLeuMetSerArgLeuLysProSerArgAla
 LeuMetProSerGluArgTyrSerThrSerThrLeuArgLysLeuMetArgProSerThrArgCysGlyAla-223
 229-CysSerGlyGlyValSerArgAsnAlaHisThrProSerAlaAlaArgAsn-245

Hydrophilic Regions - Hopp-Woods

29-PheSerIleArgArgSerSer-35
 38-TrpThrArgArgSerAspSerLeu-45
 67-MetAlaThrArgCysArgCysProProAspLys-77
 90-SerGlyAspAlaSerIleArg-96
 104-ArgAlaAspArgThrSerAla-110
 124-ArgValSerSerAsnArgAsnThrSerTrpGluThr-135
 137-AlaAsnTrpAlaArgArgGlnSerSer-145
 161-AspGlySerThrLysArgGlySerArg-169
 176-ProLeuProGluArgProThrArgAlaThrArg-186

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192-SerArgLeuLysProSerArg-198
 200-LeuMetProSerGluArgTyrSer-207
 210-ThrLeuArgLysLeuMetArgProSerThrArgCys-221
 232-GlyValSerArgAsnAlaHis-238
a277
AMPHI Regions - AMPHI
 43-PheGluValValGlyGlyLeuPheAspPheValLeu-54
 70-CysProAsnGluValIleAspValPheHisAlaLeuGln-82
 87-AlaPheAspAlaValGlyAspPheAlaGluTyrGlyGlyAlaValAspAlaAlaAspLeuLeuGluIleGlyGluLeuGlyTyrPheHis-116
 180-AlaValGlyValValAlaValAla-187

Antigenic Index - Jameson-Wolf
 2-ProArgPheGluAspLysLeuValGlyArgGlnGlyGlyGlyVal-17
 69-PheCysProAsnGluVal-74
 95-AlaGluTyrGlyGly-99
 118-ValGluProAspPheProAlaGlnThrProArgAlaGluGlyGly-132
 138-PheAspLysAlaAsp-142
 162-AspIleGlyGlySerGlyLeuGluGlyAspLeu-172
 196-LeuAspValGlyGlyLysProArgLeuGlyAla-206
 208-CysAlaGlnThrGlyGlyGlyMetGly-216
 219-GlyThrAspPheHis-223
 226-GlyLeuAspAspGlyAla-231
 239-LeuGlnPheGluAspAspLeuLeuGluGlyLysHisGlyLeu-252

Hydrophilic Regions - Hopp-Woods
 2-ProArgPheGluAspLysLeuValGlyArgGlnGlyGlu-14
 118-ValGluProAspPhe-122
 126-ThrProArgAlaGluGly-131
 138-PheAspLysAlaAsp-142
 167-GlyLeuGluGlyAspLeu-172
 198-ValGlyGlyLysProArgLeuGlyAla-206
 226-GlyLeuAspAspGlyAla-231
 239-LeuGlnPheGluAspAspLeuLeuGluGlyLysHisGlyLeu-252
a278

AMPHI Regions - AMPHI
 7-GlyAlaIlePheSerIleGly-13
 20-IleGlyProLeuProSerIleGlyArg-28
 42-ThrGlyThrSerLys-46
 101-ArgThrIleProSerValThrGluIle-109
 123-PheSerIleLeuAlaLeuIleLysSerLeuIleSer-134
 157-LeuTyrArgGlnIleGlnAsnLeuIleThrHisPheAsnPheTyrAlaAla-173
 189-GluThrLeuIleGlnHisLeuArgGlnLeuAlaAsp-200

Antigenic Index - Jameson-Wolf
 25-SerIleGlyArgProAsnAlaSerThrThrArgProThrSerSerArgProThrGlyThrSerLysIleArgPro-49
 63-SerProAsnThrThrAlaProThrGluSerArgSerArgPheIleAla-78
 80-ProLysValLeuProGlyAsnSerSerIle-89
 93-IleAlaSerAspLysProTrpMetArg-101
 110-ThrValProArgValArgThrSerAlaPheThrAspArgPheSer-124
 146-ArgHisSerArgValGlnGlyThr-153
 178-PheAspPheAspArgAspPhe-184
 209-ThrValAsnAspGlyArgPheAspMetValGlu-219

Hydrophilic Regions - Hopp-Woods

27-GlyArgProAsnAlaSerThrThrArgProThrSerSerArgProThrGlyThrSerLysIleArgPro-49
 68-AlaProThrGluSerArgSerArgPheIleAla-78
 93-IleAlaSerAspLysProTrp-99
 110-ThrValProArgValArgThr-116
 146-ArgHisSerArgValGln-151
 178-PheAspPheAspArgAspPhe-184
 211-AsnAspGlyArgPheAspMetValGlu-219

a279**AMPHI Regions - AMPHI**

6-GlyCysLeuIleSer-10
 47-AlaAlaSerIleAlaArgSerThrAla-55
 58-LeuProAlaIleThrThr-63
 74-ThrThrSerSerCysAlaAsp-80

Antigenic Index - Jameson-Wolf

13-XxxArgAlaSerAla-17
 29-TrpGluGlyThrAspThrGlySerGlyArgAlaArgLeuAla-42
 64-CysProGlyGluLeuLysLeuThr-71
 74-ThrThrSerSerCysAlaAspSer-81
 88-CysSerSerSerLysProArgIle-95
 101-ThrProCysGlyThrAlaAspCysIleSerSerAlaArgXxxArgThrSerLeu-118
 120-AlaSerAlaLysSerAsnAlaProAla-128
 148-ProProAlaSerGlu-152

Hydrophilic Regions - Hopp-Woods

13-XxxArgAlaSerAla-17
 29-TrpGluGlyThrAspThrGlySerGlyArgAlaArgLeuAla-42
 66-GlyGluLeuLysLeu-70
 89-SerSerSerLysProArgIle-95
 110-SerSerAlaArgXxxArgThrSerLeu-118
 120-AlaSerAlaLysSerAsnAla-126

a280**AMPHI Regions - AMPHI**

27-SerPheSerIleLeuGlyAspValAlaLys-36
 64-AspIleLysLysIleArgSerAla-71
 85-AspIleGlnArgAlaValLys-91
 97-TyrAlaGluAlaThrLysGlyIleGlnProLeuLys-108
 150-AlaTyrAlaGlnAsnValAlaGluAlaLeuIleLys-161
 237-ValAlaAlaIleIleArgGlnIleLys-245
 247-GluGlyIleLysAlaValPheThrGlu-255
 258-LysAspThrArgMetValAspArgIleAlaLysGluThr-270
 278-LeuTyrSerAspAlaLeuGlyAsnAlaProAlaAspThrTyrIle-292

Antigenic Index - Jameson-Wolf

1-MetLysHisProLys-5
 38-IleGlyGlyGluArgValSer-44
 51-AlaAsnGlnAspThrHis-56
 61-ThrSerGlyAspIleLysLysIleArgSerAlaLys-72
 82-GluAlaAlaAspIleGlnArgAlaValLysGlnSerLysValSerTyrAlaGluAlaThrLysGlyIleGln-105
 107-LeuLysAlaGluGluGluGlyGlyHisHisHisAspHisAspHisAspHisAspHisGluGlyHisHisHisAspHisGlyTyrAspProHisValTrpAsnAspPro-145
 159-LeuIleLysAlaAspProGluGlyLysValTyrTyr-170
 180-GlnLeuLysLysLeuHisSerAspAla-188

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196-ProAlaAlaLysArgLysValLeuThr-204
 212-MetGlyLysArgTyrHis-217
 222-AlaProGlnGlyValSerSerGluAlaGluProSerAlaLysGln-236
 242-ArgGlnIleLysArgGluGlyIle-249
 255-GluAsnIleLysAspThrArgMetValAspArgIleAlaLysGluThrGlyVal-272
 274-ValSerGlyLysLeuTyrSer-280
 286-AlaProAlaAspThr-290
 295-TyrArgHisAsnIle-299

Hydrophilic Regions - Hopp-Woods

1-MetLysHisProLys-5
 38-IleGlyGlyGluArgValSer-44
 63-GlyAspIleLysLysIleArgSerAlaLys-72
 82-GluAlaAlaAspIleGlnArgAlaValLysGlnSerLys-94
 99-GluAlaThrLysGly-103
 107-LeuLysAlaGluGluGlyGlyHisHisHisAspHisAspHisAspHisAspHisGluGlyHis
 HisHisAspHisGlyGluTyrAsp-138
 159-LeuIleLysAlaAspProGluGly-166
 180-GlnLeuLysLysLeuHisSerAspAla-188
 196-ProAlaAlaLysArgLysValLeuThr-204
 226-ValSerSerGluAlaGluProSerAlaLysGln-236
 242-ArgGlnIleLysArgGluGlyIle-249
 255-GluAsnIleLysAspThrArgMetValAspArgIleAlaLysGluThrGlyVal-272
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AMPHI Regions - AMPHI

62-AlaAlaGlyMetLeuMetAlaLeuLeuAlaGlyLeuValSerArgPhe-77
 126-LeuGlnLeuIleAlaAlaValSerThrLeuThr-136
 140-LeuAlaValIleTyrArg-145
 179-LeuValSerGlyPheGlnAlaLeuGlyThrLeuMetSerVal-192
 205-TrpAlaLysHisMet-209
 216-SerValLeuThrAlaLeuLeuCysGly-224

Antigenic Index - Jameson-Wolf

25-ArgArgMetSerLeu-29
 78-ThrThrLeuLysGluAspAlaAsn-85
 102-SerLysAsnGlySerSerVal-108
 159-SerValGlyGlyLysGlyGly-165
 236-IleProSerGlyPro-240
 256-LeuGlyLysGluGlyGlyIle-262
 266-TrpLeuLysAsnHisArgHisHisThrThr-275

Hydrophilic Regions - Hopp-Woods

25-ArgArgMetSerLeu-29
 78-ThrThrLeuLysGluAspAlaAsn-85
 103-LysAsnGlySerSer-107
 256-LeuGlyLysGluGlyGlyIle-262
 267-LeuLysAsnHisArgHisHisThr-274

a282**AMPHI Regions - AMPHI**

10-LeuIleValAlaPheLeuValLeuIleAsnProPheSerAlaLeu-24
 50-ValPheAlaValIleAlaValPheAlaLeuIleGlyGlyThrLeu-64
 111-ValArgProAlaArgAsn-116
 176-ValSerArgLeuLeu-180
 186-ThrIleLeuAsnArgIleMetGlyMet-194

Antigenic Index - Jameson-Wolf

31-ThrAsnGlyHisSerThrLysGluArgArgLysValAlaArg-44
 92-AsnGlyAsnAspAsnProAlaLysGlnAsnLeuGlyAlaGlnProGluThrGlyGlnValArgProAlaArgAlaGlyAla-119

Hydrophilic Regions - Hopp-Woods

34-HisSerThrLysGluArgArgLysValAlaArg-44
 92-AsnGlyAsnAspAsnProAlaLysGlnAsnLeu-102
 104-AlaGlnProGluThrGlyGlnValArgProAlaArgAsn-116

a283**AMPHI Regions - AMPHI**

11-ThrLeuAlaSerPheLeuPro-17
 32-GlyGlyAsnSerTyrSerAspValProLysGlnLeuHis-44
 67-AlaAspAlaGlyLysArgThr-73

Antigenic Index - Jameson-Wolf

28-TrpLysAspGlyGlyGlyAsnSerTyrSerAspValProLysGlnLeuHisProAspGlnSerGln-49
 53-LeuArgThrArgGlnThrLysProAlaValLysProAlaGlnAlaAspAlaGlyLysArgThrAspGlyAlaAlaGlnGluAsnAsnProAspThrAlaGluLysAsnArgGlnLeuGluGluLysLysArgIleAlaGluThrGluArgGlnAsnLysGluGluAsnCysArgIleSerLysMetAsnLeu-117
 121-GlyAsnSerAsnAlaLysAsnLysAspAspLeuIleArgLysTyrAsnAsnAlaValAsnLysTyrCysArg-144

Hydrophilic Regions - Hopp-Woods

35-SerTyrSerAspValProLys-41
 43-LeuHisProAspGlnSerGln-49
 53-LeuArgThrArgGlnThrLysProAlaValLysProAlaGlnAlaAspAlaGlyLysArgThrAspGlyAlaAlaGlnGluAsnAsnProAspThrAlaGluLysAsnArgGlnLeuGluGluLysLysArgIleAlaGluThrGluArgGlnAsnLysGluGluAsnCysArgIleSerLysMetAsnLeu-117
 123-SerAsnAlaLysAsnLysAspAspLeuIleArgLysTyrAsn-136

a284**AMPHI Regions - AMPHI**

43-GluAlaPheAlaGlyPhePheGluThrVal-52
 61-ThrPheAlaAlaArgPhe-66
 125-ValAspPheAspValPhe-130
 154-ValValPheArgLeuPheArgGlnValValValAsp-165
 174-AspThrAlaCysGlyAsnValGlyGly-182
 187-AlaAlaAlaPheAlaGlnIleHisGln-195
 216-PheValGlnPheIleArgAspAspPheGlyHisGly-227
 277-PheArgValPheGlyGlnPheAlaArgGlnPheAla-288
 304-PheArgArgGlyPheAspAspGlyPheAspValValAspLys-317
 340-AlaAlaLeuHisGlnValHisGlnThrAla-349
 352-GlyAspAsnGlnIleAspArgPheAlaGln-361
 407-AlaArgAlaPheAlaArgPhePheAlaAlaPheGlyGlnSerLeuGlnSer-423

Antigenic Index - Jameson-Wolf

1-MetProSerGluThrArgAsnArgPhe-9
 109-PheAspGlyGlnPhe-113
 132-HisPheGlyLysArgAsnArgAsnThrArgAla-142
 147-GlyAlaProAspAlaVal-152
 166-AsnValGlyAsnGlyArgTyrValAspThrAlaCysGlyAsnValGlyGlyAsnGlnAsn-185
 209-AlaValGlyGlyGlu-213
 219-PheIleArgAspAspPheGlyHisGlyPheGlyGlyArgGluAsnHisAla-235
 273-AspPheAspAspPheArg-278

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286-GlnPheAlaAspArgAlaValProSerGlyGlyGluGlnGlnSer-300
 303-ValPheArgArgGlyPheAspAspGlyPheAspValValAspLysAlaHis-319
 347-GlnThrAlaArgArgGlyAspAsnGlnIleAspArgPheAla-360
 362-GlyAlaGlyLeuValAlaGluArgCysThrThrAspAspAlaAspGlyThrGluProThr-381
 398-PheAlaGlyArgArgGlnHisGlnArgAlaArgAla-409
 419-GlnSerLeuGlnSerArg-424

Hydrophilic Regions - Hopp-Woods

1-MetProSerGluThrArgAsnArgPhe-9
 134-GlyLysArgAsnArgAsnThrArgAla-142
 220-IleArgAspAspPheGly-225
 229-GlyGlyArgGluAsnHisAla-235
 286-GlnPheAlaAspArgAlaValProSerGlyGlyGluGlnGln-299
 306-ArgGlyPheAspAspGlyPheAspValValAspLysAlaHis-319
 347-GlnThrAlaArgArgGlyAspAsnGlnIleAspArgPheAla-360
 366-ValAlaGluArgCysThrThrAspAspAlaAspGlyThrGlu-379
 398-PheAlaGlyArgArgGlnHisGlnArgAlaArgAla-409

a285-1**AMPHI Regions - AMPHI**

15-ValCysPheLeuGly-19
 34-GlnIleProSerTrp-38
 50-GlyThrLeuLeuAspGlyPheAsp-57
 116-SerLeuProAspSerIleAspLeuPro-124
 208-HisSerThrAlaArg-212
 240-HisProPheAlaGluSerLeuAspLysThrLeuGluGluValLeu-254
 266-ValProSerLeuPro-270
 280-AlaIleProSerPheSerAsp-286
 313-GlnValLeuGlySer-317
 592-IleGlyLysAlaAlaAspIle-598
 609-ProAspThrSerArg-613
 629-GlyAlaGluValValAsp-634
 671-GlyIleAsnArgGluLeuThrArgTrp-679
 747-IleAlaGluLeuHisAsnPhePheLysProProPhe-758
 776-AlaArgGlyTyrLeu-780
 836-PheGlyGlyAsnMetAlaAsn-842
 848-ArgIleThrAlaSerLeuProAspLeuGlyThrLeu-859
 868-GlnAsnIleThrGlySerLeuAsnAlaAla-877
 955-GlySerIleAlaAsp-959
 1008-ThrAlaGluLeuSer-1012
 1061-ValThrGlyMetIleLys-1066
 1135-SerGlyGlySerValArgGlyValGlyThrValArg-1146
 1165-ThrValSerPheValGlyProLeuAsn-1173
 1190-AlaGlyValGluIleLeuGlySerLeuAsn-1199
 1244-LeuAlaGlyGlnIle-1248
 1305-ValLysLeuIleTyrArgLeuThrArgAlaIleGlnAlaValAlaArgIleGlySer-1323

Antigenic Index - Jameson-Wolf

43-IleSerSerGlnAsnLeuLysGlyThrLeuLeuAspGlyPheAspGlyAspAsnTrpSerIleGluThrGluGlyAlaAspLeuLysIleSerArg-74
 80-LysProSerGluLeuMetArgArgSerLeuHis-90
 104-LysProThrProProLysGluGluArgProProLeuSerLeuProAspSerIleAsp-122
 130-AspArgPheGluThrGlyLysIleSerMetGlyLysAlaPheAspLysGlnThrValTyr-149

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151-GluArgLeuAspAlaSerTyrArgTyrAspArgLysGlyHisArgLeuAspLeuLysAlaAlaAspThrPro
TrpSerSerSerSerGlySerAla-182
185-GlyLeuLysLysProPheAla-191
198-ThrLysGlyGlyLeuGluGlyLysThrIle-207
209-SerThrAlaArgLeuSerGlySerLeuLysAspValArgAla-222
224-LeuAlaIleAspGlyGlyAsnIleArgLeuSerGlyLysSer-237
244-GluSerLeuAspLysThrLeuGlu-251
268-SerLeuProAspAla-272
292-GlySerLeuAspLeuGluAsnThrLys-300
302-GlyPheAlaAspArgAsnGlyIleProVal-311
320-IleArgGlnAspGlyThrValHis-327
337-GlyArgGlyGlyIleArgLeuSerGlyLysIleAspThrGluLysAspIleLeu-354
362-SerValGlyAlaGluAspValLeu-369
372-AlaPheLysGlyArgLeuAspGlySerIle-381
387-ThrAlaSerProLysIle-392
400-ThrAlaArgThrAspGlySerLeu-407
411-SerAspProAlaAsnGlyGlnArgLysLeuVal-421
430-GlyGlnGlySerLeuThr-435
442-LeuPheLysAspArgLeuLeuLysLeuAspIleArgSerArgAlaPheAspProSerArgIleAspProGln
Leu-466
480-GluLeuAlaLysGluLysPheThrGlyLys-489
508-IleValTyrGluSerArgHisLeuProArgAlaAlaVal-520
522-LeuArgLeuGlyArgAsnIleIleLysThrAspGlyPheGlyLysLysGlyAspArgLeuAsn-543
548-AlaProAspLeuSerArgPheGly-555
563-AsnValArgGlyHisLeuSerGlyAspLeuAspGlyGlyIleArgThrPheGluThrAspLeuSerGlyAla
Ala-587
594-LysAlaAlaAspIleArgSer-600
605-LeuLysGlySerProAspThrSerArgProIleArgAlaAspIleLysGlySerArgLeuSerLeuSerGly
GlyAlaGluValValAspThrAlaAspLeuMetLeuAspGlyThrGlyVal-645
647-HisArgIleArgThr-651
656-ThrLeuAspGlyLysProPheLysPheAspLeuAspAlaSerGlyGlyIleAsnArgGluLeuThrArgTrp
LysGlySerIle-683
696-LeuGlnAsnArgMetThrLeu-702
704-AlaGlyAlaGluArgValAla-710
729-SerTrpAspLysLysThrGlyIleSerAlaLysGlyGlyAla-742
764-LeuAsnGlyAspTrp-768
772-TyrGlyArgAsnAlaArgGly-778
782-IleSerArgGlnSerGlyAspAlaValLeu-791
803-SerLeuLysThrArgPheGlnAsnAspArgIleGly-814
817-LeuAspGlyGlyAlaArgPheGlyArgIleAsnAlaAspLeuAspIle-832
844-ProLeuGlyGlyArgIleThr-850
882-GlyArgValGlySerProSerVal-889
893-ValAsnGlySerSerAsnTyrGlyLysIleAsnGly-904
908-ValGlyGlnSerArgSerPheAspThrAlaProLeuGlyGlyArgLeuAsn-924
941-GlnThrValLysGlySerLeu-947
956-SerIleAlaAspProHisLeuGlyGly-964
966-IleAsnGlyAspLysLeuTyrTyrArgAsnGlnThr-977
982-LeuAspAsnGlySerLeuArg-988
991-IleAlaGlyArgLysTrpVal-997
1001-LeuLysPheArgHisGluGlyThrAlaGluLeuSerGly-1013
1015-ValGlyMetGluAsnSerGlyProAspValAspIle-1026
1031-AspLysTyrArgIleLeuSerArgProAsnArgArgLeuThr-1044
1047-GlyAsnThrArgLeuArgTyrSerProGlnLysGlyIle-1059
1065-IleLysThrAspGlnGlyLeuPheGlySerGlnLysSerSerMetProSerValGlyAspAspVal-1086
1091-GluValLysLysGluAlaAla-1097

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1109-AspLeuAsnAspGlyIleArg-1115
1134-GlnSerGlyGlySerValArgGlyValGly-1143
1146-ArgValIleLeuLysGlyArgTyrIleAlaTyrGlyGlnAspLeuAspIleThrLysGlyThr-1165
1171-ProLeuAsnAspProAsnLeuAsnIleArgAlaGluArgArgLeuSerProValGly-1189
1197-SerLeuAsnSerProArgIle-1203
1207-AlaAsnGluProMetSerGluLysAspLysLeu-1217
1225-AlaGlySerGlySerSerGlyAspAsnAlaAla-1235
1246-GlyGlnIleAsnAspArgIleGlyLeu-1254
1256-AspAspLeuGlyPheThrSerLysArgSerArgAsnAlaGlnThrGlyGluLeuAsnProAlaGlu-1277
1283-GlyLysGlnLeuThrGlyLys-1289
1299-SerSerAlaGluGlnSerVal-1305
1321-IleGlySerArgSerSerGlyGlyGluLeu-1330
1335-ArgPheAspArgPheSerGlySerAspLysLysAspSerAlaGlyAsnSerLysGlyLys-1354

Hydrophilic Regions - Hopp-Woods

56-PheAspGlyAspAsnTrpSerIleGluThrGluGlyAlaAspLeuLysIleSerArg-74
83-GluLeuMetArgArgSerLeuHis-90
105-ProThrProProLysGluGluArgProPro-114
130-AspArgPheGluThrGlyLys-136
141-LysAlaPheAspLys-145
151-GluArgLeuAspAla-155
157-TyrArgTyrAspArgLysGlyHisArgLeuAspLeuLysAlaAlaAsp-172
200-GlyGlyLeuGluGlyLysThrIle-207
215-GlySerLeuLysAspValArgAla-222
244-GluSerLeuAspLysThrLeuGlu-251
292-GlySerLeuAspLeuGluAsnThrLys-300
302-GlyPheAlaAspArgAsnGlyIlePro-310
320-IleArgGlnAspGly-324
343-LeuSerGlyLysIleAspThrGluLysAspIleLeu-354
364-GlyAlaGluAspValLeu-369
373-PheLysGlyArgLeuAspGly-379
401-AlaArgThrAspGly-405
412-AspProAlaAsnGlyGlnArgLysLeuVal-421
442-LeuPheLysAspArgLeuLeuLysLeuAspIleArgSerArgAlaPheAspProSerArgIleAspPro-464
480-GluLeuAlaLysGluLysPheThrGly-488
508-IleValTyrGluSerArgHisLeuPro-516
522-LeuArgLeuGlyArgAsnIleIleLysThrAspGlyGlyPheGlyLysLysGlyAspArgLeuAsn-543
570-GlyAspLeuAspGlyGlyIleArgThrPheGluThrAspLeuSerGlyAlaAla-587
594-LysAlaAlaAspIleArgSer-600
607-GlySerProAspThrSerArgProIleArgAlaAspIleLysGlySerArgLeuSerLeu-626
631-GluValValAspThrAlaAspLeuMetLeu-640
647-HisArgIleArgThr-651
657-LeuAspGlyLysProPheLysPheAspLeuAspAla-668
670-GlyGlyIleAsnArgGluLeuThrArgTrpLysGly-681
704-AlaGlyAlaGluArgValAla-710
729-SerTrpAspLysLysThrGlyIleSerAlaLysGlyGlyAla-742
783-SerArgGlnSerGly-787
806-ThrArgPheGlnAsnAspArgIle-813
819-GlyGlyAlaArgPheGlyArgIleAsnAlaAspLeuAspIle-832
1001-LeuLysPheArgHisGluGlyThrAlaGluLeu-1011
1017-MetGluAsnSerGlyProAspValAspIle-1026
1031-AspLysTyrArgIleLeuSerArgProAsnArgArgLeuThr-1044
1049-ThrArgLeuArgTyrSerPro-1055
1065-IleLysThrAspGln-1069

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1075-GlnLysSerSerMet-1079
 1091-GluValLysLysGluAlaAla-1097
 1109-AspLeuAsnAspGlyIleArg-1115
 1146-ArgValIleLysGlyArgTyrLysAlaTyrGlyGlnAspLeuAspIleThrLys-1163
 1179-IleArgAlaGluArgArgLeuSer-1186
 1209-GluProMetSerGluLysAspLysLeu-1217
 1225-AlaGlySerGlySerSerGlyAspAsnAlaAla-1235
 1248-IleAsnAspArgIleGlyLeu-1254
 1259-GlyPheThrSerLysArgSerArgAsnAlaGlnThrGlyGluLeuAsnPro-1275
 1300-SerAlaGluGlnSerVal-1305
 1321-IleGlySerArgSerSerGlyGly-1328
 1335-ArgPheAspArgPheSerGlySerAspLysLysAspSerAlaGlyAsnSerLysGlyLys-1354
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AMPHI Regions - AMPHI

69-GluIleLysAspMetVal-74
 102-ProAspAsnValLysThr-107
 145-ValAlaIleLeuGlyAsp-150
 157-LeuAlaGluTyrTyrArgAsnAlaLeuGluAsnTrpGlnGlnProValGlySer-174
 198-ProLeuAlaLysLeuGlyAsn-204
 238-ThrGlnArgTyrProGluGlnIleValSerGlyLeuAlaArgPheGlnProGlyThr-256
 326-AspTyrTyrAsnLeuPheAsnLys-333
 354-IleSerGlnProArg-358
 375-ThrThrGlnAsnLeu-379
 428-ThrAlaSerTrpLysArgGlnLeuLeu-436
 455-ThrLeuGlyAlaPhe-459
 513-GlyAlaSerSerVal-517
 555-LeuSerGlyAlaValPheHisAspMetGlyAspAlaAlaAlaAsn-569
 584-ArgTrpPheSerProLeu-589

Antigenic Index - Jameson-Wolf

1-MetHisAspThrArgThrMetMet-8
 30-AlaAspLeuSerGluAsnLysAla-37
 43-PheLysAsnLysSerProAspThrGluSerValLysLeuLysProLysPheProVal-61
 63-IleAspThrGlnAspSerGluIleLysAspMetValGluGluHisLeu-78
 83-GlnGlnGlnGluGluValLeuAspLysGluGlnThr-94
 97-LeuAlaGluGluAlaProAspAsnValLysThrMetLeuArgSerLysGlyTyrPheSerSerLysValSerLeuThrGluLysAspGlyAla-127
 133-ThrProGlyProArgThrLysIle-140
 151-IleLeuSerAspGlyAsnLeuAlaGluTyrTyrArgAsnAlaLeuGluAsnTrpGln-169
 172-ValGlySerAspPheAspGlnAspSerTrpGluAsnSerLysThrSerVal-188
 192-ValThrArgLysAlaTyrPro-198
 201-LysLeuGlyAsnThrArgAlaAlaValAsnProAspThrAlaThrAla-216
 223-AspSerGlyArgProIleAla-229
 234-GluIleThrGlyThrGlnArgTyrProGluGlnIle-245
 252-PheGlnProGlyThrProTyrAspLeu-260
 270-LeuGluGlnAsnGlyHisTyrSerGly-278
 283-AlaAspPheAspArgLeuGlnGlyAspArgValProVal-295
 298-SerValThrGluValLysArgHisLysLeuGluThrGlyIleArgLeuAspSerGluTyrGlyLeuGlyGly-321
 342-AspMetAspLysTyrGluThr-348
 355-SerGlnProArgAsnTyrArgGlyAsnTyrTrp-365
 368-AsnValSerTyrAsnArgSerThrThrGlnAsnLeuGluLysArgAlaPheSerGlyGly-387
 391-ValArgAspArgAlaGlyIleAspAlaArgLeuGly-402
 405-PheLeuAlaGluGlyArgLysIleProGlySerAspIleAspLeuGlyAsnSerHisAla-424
 430-SerTrpLysArgGlnLeu-435

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441-HisProGluAsnGlyHisTyrLeuAspGlyLysIle-452
 468-ThrSerAlaArgAlaGly-473
 476-PheThrProGluAsnLysLysLeu-483
 496-ValAlaArgAspAsnAlaAsnValPro-504
 509-PheArgSerGlyGlyAlaSerSerValArgGlyTyrGluLeuAspSer-524
 534-ValLeuProGluArgAlaLeu-540
 562-AspMetGlyAspAla-566
 568-AlaAsnPheLysArgMetLysLeuLysHisGlySerGlyLeu-581
 598-TyrGlyHisSerAspLysLysIleArg-606

Hydrophilic Regions - Hopp-Woods

1-MetHisAspThrArgThrMetMet-8
 30-AlaAspLeuSerGluAsnLysAla-37
 44-LysAsnLysSerProAspThrGluSerValLysLeuLysProLysPheProVal-61
 63-IleAspThrGlnAspSerGluIleLysAspMetValGluGluHisLeu-78
 84-GlnGlnGluGluValLeuAspLysGluGlnThr-94
 97-LeuAlaGluGluAlaProAspAsnValLysThrMetLeuArgSer-111
 119-ValSerLeuThrGluLysAspGlyAla-127
 134-ProGlyProArgThrLysIle-140
 174-SerAspPheAspGlnAspSerTrpGluAsnSerLysThr-186
 192-ValThrArgLysAlaTyrPro-198
 206-ArgAlaAlaValAsnProAspThrAlaThr-215
 239-GlnArgTyrProGlu-243
 283-AlaAspPheAspArgLeuGlnGlyAspArgValProVal-295
 298-SerValThrGluValLysArgHisLysLeuGluThrGlyIleArgLeuAspSerGluTyr-317
 342-AspMetAspLysTyrGluThr-348
 373-ArgSerThrThrGlnAsnLeuGluLysArgAlaPhe-384
 392-ArgAspArgAlaGlyIleAspAlaArgLeuGly-402
 405-PheLeuAlaGluGlyArgLysIleProGlySerAspIleAspLeu-419
 478-ProGluAsnLysLysLeu-483
 496-ValAlaArgAspAsnAlaAsn-502
 518-ArgGlyTyrGluLeuAspSer-524
 534-ValLeuProGluArgAlaLeu-540
 562-AspMetGlyAspAla-566
 568-AlaAsnPheLysArgMetLysLeuLysHis-577
 600-HisSerAspLysLysIleArg-606

a287**AMPHI Regions - AMPHI**

29-LysSerAlaAspThrLeuSerLysProAlaAla-39
 77-GlyGlyGlnAspMet-81
 109-AsnAspMetProGlnAsn-114
 131-MetProThrArgAspMetGlyAsnGlnAlaProAspAlaGlyGluSerAlaGlnProAlaAsnGlnProAsp
 MetAlaAsnAlaAlaAspGlyMet-162
 171-GluAsnAlaGlyAsnThrAlaAspGlnAlaAlaAsnGlnAlaGluAsn-186
 192-SerGlnAsnProAla-196
 206-GlyGlySerAspPhe-210
 213-IleAsnValAlaAsnGly-218
 256-LeuSerAspGluGluLysIleAsnLysTyrLysLys-267
 306-PheArgArgSerAlaArg-311
 419-LysSerValAspGlyIleIleAspSer-427
 447-PheLysGlyThrTrpThr-452

459-ValSerGlyArgPheTyr-464

Antigenic Index - Jameson-Wolf

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17-AlaCysGlyGlyGlyGlyGlySerProAspValLysSerAlaAspThrLeuSerLysProAla-38
 42-ValThrGluAspValGlyGluGluValLeuProLysGluLysLysAspGluGluAlaValSerGlyAlaProG
 lnAlaAspThrGlnAspAlaThrAlaGlyLysGlyGlyGlnAspMet-81
 85-SerAlaGluAsnThrGlyAsnGlyGlyAlaAlaThrThrAspAsnProGluAsnLysAspGluGlyProGlnA
 snAspMetProGlnAsnAlaAlaAspThrAspSerSerThrProAsnHisThrProAlaProAsnMetProThrAr
 gAspMetGlyAsnGlnAlaProAspAlaGlyGluSerAlaGlnProAlaAsnGlnProAspMetAlaAsnAlaAla
 AspGlyMetGlnGlyAspAspProSerAlaGlyGluAsnAlaGlyAsnThrAlaAspGlnAlaAlaAsnGlnAlaG
 luAsnAsnGlnValGlyGlySerGlnAsnProAlaSerSerThrAsnProAsnAlaThrAsnGlyGlySerAspPh
 eGlyArg-212
 214-AsnValAlaAsnGlyIleLysLeuAspSerGlySerGluAsnVal-228
 232-HisCysLysAspLysValCysAspArgAspPheLeuAspGluGluAlaProProLysSerGluPheGluLys
 LeuSerAspGluGluLysIleAsnLysTyrLysLysAspGluGlnArgGluAsnPhe-274
 278-ValAlaAspArgValGluLysAsnGlyThrAsnLys-289
 293-IleTyrLysAspLysSerAlaSerSerSerSerAlaArgPheArgArgSerAlaArgSerArgArgSerLeu
 ProAla-318
 332-IleValAspGlyGluAla-337
 342-GlyHisSerGlyAsn-346
 349-AlaProGluGlyAsnTyrArgTyrLeu-357
 360-GlyAlaGluLysLeuSerGlyGlySer-368
 374-GlnGlyGluProAlaLysGlyGluMet-382
 397-HisMetGluAsnGlyArgProSerProSerGlyGlyArgPheAlaAla-412

414-ValAspPheGlySerLysSerValAspGlyIleIleAspSerGlyAspAspLeuHisMetGlyThrGlnLys
 Phe-438
 442-IleAspGlyAsnGlyPheLysGlyThrTrpThrGluAsnGlyGlyGlyAspValSerGly-461
 463-PheTyrGlyProAlaGlyGluGluValAlaGlyLysTyrSerTyrArgProThrAspAlaGluLysGlyGly
 Phe-487
 491-AlaGlyLysLysGluGlnAsp-497

Hydrophilic Regions - Hopp-Woods

22-GlyGlyGlySerProAspValLysSerAlaAspThrLeuSerLysProAla-38
 42-ValThrGluAspValGlyGluGluValLeuProLysGluLysLysAspGluGluAlaValSer-62
 65-ProGlnAlaAspThrGlnAspAlaThrAlaGlyLysGlyGlyGlnAsp-80
 85-SerAlaGluAsnThrGly-90
 95-AlaThrThrAspAsnProGluAsnLysAspGluGlyProGlnAsnAspMetProGlnAsnAlaAlaAspThrA
 spSerSerThr-122
 131-MetProThrArgAspMetGlyAsnGlnAlaProAspAlaGlyGluSerAlaGln-148
 151-AsnGlnProAspMetAlaAsnAlaAlaAspGlyMetGlnGlyAspAspProSerAlaGlyGluAsnAlaGly
 AsnThrAlaAspGlnAlaAlaAsnGlnAlaGluAsnAsnGln-188
 193-GlnAsnProAlaSer-197
 206-GlyGlySerAspPheGlyArg-212
 219-IleLysLeuAspSerGlySerGlu-226
 232-HisCysLysAspLysValCysAspArgAspPheLeuAspGluGluAlaProProLysSerGluPheGluLys
 LeuSerAspGluGluLysIleAsnLysTyrLysLysAspGluGlnArgGluAsnPhe-274
 278-ValAlaAspArgValGluLysAsnGlyThr-287
 294-TyrLysAspLysSerAlaSerSerSerSerAlaArgPheArgArgSerAlaArgSerArgArgSerLeuPro
 -317
 332-IleValAspGlyGluAla-337
 360-GlyAlaGluLysLeuSer-365
 374-GlnGlyGluProAlaLysGlyGluMet-382
 399-GluAsnGlyArgProSerProSerGlyGly-408

414-ValAspPheGlySerLysSerValAspGlyIleIleAspSerGlyAspAspLeuHis-432
 455-GlyGlyGlyAspValSer-460

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467-AlaGlyGluGluValAlaGly-473

475-TyrSerTyrArgProThrAspAlaGluLysGlyGly-486

491-AlaGlyLysLysGluGlnAsp-497

a288**AMPHI Regions - AMPHI**

7-ValSerArgValLeu-11

54-IleValThrLysCysAla-59

61-ArgProTyrArgThrPheSerProLeuProVal-71

97-HisSerThrLeuArg-101

150-AlaLeuPheGlnAlaGlyPheAspLysAlaValGln-161

Antigenic Index - Jameson-Wolf

2-HisThrGlyGlnAla-6

28-AsnLeuProGluArgSerAlaGlySer-36

58-CysAlaValArgProTyrArgThrPheSerPro-68

72-LeuProLysGlnProSerAla-78

89-LeuProArgProAlaValAsnArgHisSerThrLeuArgSerProAspPheProProArgMet-109

113-IleArgGlyAspCysLeuPro-119

126-IleIleThrArgAsnAlaLysMetProSerGluThrValGlnValSerAspGlyIleGlnProLys-147

155-GlyPheAspLysAlaVal-160

Hydrophilic Regions - Hopp-Woods

28-AsnLeuProGluArgSerAla-34

58-CysAlaValArgPro-62

98-SerThrLeuArgSerProAspPheProPro-107

113-IleArgGlyAspCys-117

126-IleIleThrArgAsnAlaLysMetProSerGluThrValGlnVal-140

155-GlyPheAspLysAlaVal-160

a292**AMPHI Regions - AMPHI**

7-LysIleLeuThrProPheThrValLeuProLeu-17

40-GlyLysSerValAla-44

62-ValLeuSerValSerGlu-67

69-ProValLysGlyIleTyrGlu-75

110-GluArgAlaAlaAspLeu-115

124-ProLeuAspLysAlaIleLysGluValArgGly-134

150-PheCysLysArgLeuGluHisGluPheGluLysMetThrAspValThr-165

195-LysAlaTrpThrAspTrpMetArg-202

212-IleCysAspAsnProVal-217

Antigenic Index - Jameson-Wolf

1-MetLysThrLysLeu-5

23-ThrProValSerAsnAlaAsnAlaGluProAlaValLysAlaGluSerAlaGlyLysSerVal-43

47-LeuLysAlaArgLeuGluLysThrTyrSerAlaGlnAspLeuLys-61

66-SerGluThrProValLysGlyIle-73

85-TyrThrAspAlaGluGlyGlyTyr-92

99-IleAsnIleAspThrArgLysAsnLeuThrGluGluArgAlaAlaAspLeuAsnLys-117

124-ProLeuAspLysAlaIleLysGluValArgGlyAsnGlyLysLeuLysVal-140

142-ValPheSerAspProAspCysProPhe-150

152-LysArgLeuGluHisGluPheGluLysMetThrAsp-163

177-HisProAspAlaAlaArgLysAla-184

189-CysGlnProAspArgAlaLysAla-196

200-TrpMetArgLysGlyLysPheProVal-208

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210-GlySerIleCysAspAsnProValAlaGluThrThrSerLeuGlyGlu-225
 237-PheProAsnGlyArgSerGlnSerGlyTyrSerPro-248
 250-ProGlnLeuGluGluIleIleArgLysAsnGln-260

Hydrophilic Regions - Hopp-Woods

1-MetLysThrLysLeu-5
 28-AlaAsnAlaGluProAlaValLysAlaGluSerAlaGlyLysSerVal-43
 47-LeuLysAlaArgLeuGluLysThrTyrSer-56
 99-IleAsnIleAspThrArgLysAsnLeuThrGluGluArgAlaAlaAspLeuAsnLys-117
 124-ProLeuAspLysAlaIleLysGluValArgGlyAsnGlyLysLeuLys-139
 144-SerAspProAspCysProPhe-150
 152-LysArgLeuGluHisGluPheGluLysMetThrAsp-163
 179-AspAlaAlaArgLysAla-184
 190-GlnProAspArgAlaLysAla-196
 200-TrpMetArgLysGlyLysPhe-206
 240-GlyArgSerGlnSer-244
 250-ProGlnLeuGluGluIleIleArgLysAsnGln-260

a294**AMPHI Regions - AMPHI**

27-ArgPheProAlaAlaPheArgArgTyrSer-36
 45-LysProAlaGlyThr-49
 51-TrpHisArgValArgArgPheLysSerAsnArgArgThr-63
 65-GlyGlyLysProLeuLysLysThrTyrArg-74
 92-AsnIleAlaGluArgAlaArgGluSerProArgArgTyrGlyLysArgTyrAlaAspIleGlyAspAsp-114
 133-AlaValAlaHisIleValHisLeu-140
 176-AlaMetSerTyrArg-180
 206-SerIleLeuGlyGluProPheAlaThrSerPheGly-217
 227-AlaPheSerValLeuAlaHisPhe-234
 247-ThrValGlyTrpSerLysTyrIleHisThrVal-257

Antigenic Index - Jameson-Wolf

20-AlaValArgThrSerSerAsnArgPhe-28
 32-PheArgArgTyrSerAlaPheArg-39
 44-ProLysProAlaGlyThrProTrpHisArgValArgArgPheLysSerAsnArgArgThrArgGlyGlyLysProLeuLysLysThrTyrArgProArgArgAlaGluCysArgCysArgArgAlaArgThr-87
 93-IleAlaGluArgAlaArgGluSerProArgArgTyrGlyLysArgTyrAlaAspIleGlyAspAspSerAspThrIleArg-119
 121-ArgValPheArgLeuGluTyr-127
 161-HisThrGlyArgValSerCysGluAlaArgArgGluValGluLysAlaMetSer-178
 240-LysMetAlaArgSer-244

Hydrophilic Regions - Hopp-Woods

20-AlaValArgThrSerSerAsnArg-27
 52-HisArgValArgArgPheLysSerAsnArgArgThrArgGlyGlyLysProLeuLysLysThrTyrArgProArgArgAlaGluCysArgCysArgArgAlaArgThr-87
 93-IleAlaGluArgAlaArgGluSerProArgArgTyrGlyLysArgTyrAlaAspIleGlyAspAspSerAspThrIleArg-119
 121-ArgValPheArgLeuGluTyr-127
 165-ValSerCysGluAlaArgArgGluValGluLysAlaMetSer-178

a295**AMPHI Regions - AMPHI**

79-PheArgGlnProArg-83
 112-ArgPhePheArgGlnPro-117
 130-AlaPheLeuHisGlnIle-135
 175-AsnLeuArgGlyPhePro-180

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188-HisGlnGlnArgArgIleGlyLysThrLeuProGlnLeu-200
 232-ThrLeuAlaProMetArgProIleCysArgGlyThrSerGly-245
 262-TyrIleIleLysProLeuGluHis-269

Antigenic Index - Jameson-Wolf

4-MetAlaArgHisAspAspGlnGlnGly-12
 18-LeuProArgArgGlnGln-23
 49-PheLysLeuProArgGlnArgPheHisLeu-58
 73-HisGlyCysArgAlaGlnPheArgGlnProArgArgIleArgLeu-87
 91-GlnThrAlaArgGlnArgSerGlyGlyArgThrAspGlnAlaAla-105
 114-PheArgGlnProArgIleArgGlnLysGlnArgHisThrArg-127
 136-GlyProAspPheGly-140
 143-GlnAsnAlaGluHisArgAla-149
 170-CysIleArgLysGlnAsnLeuArgGlyPheProSerArgArgGlyHisLeuArgHisGlnGlnArgArgIle
 GlyLysThrLeu-197
 205-LeuGlyGlyThrArgPheProAspArgAsnGlyValTyrProAsnArgAlaGlyAsnGlyIleArgIleArg
 Leu-229
 238-ProIleCysArgGlyThrSerGly-245
 252-ProTyrProTyrArgArgLysGlnProGlnTyr-262
 273-SerCysLysThrAsnAlaValArgThrValArgThrAlaPheArgGlnArgAsnGlnIleSer-293

Hydrophilic Regions - Hopp-Woods

5-AlaArgHisAspAspGlnGlnGly-12
 18-LeuProArgArgGlnGln-23
 77-AlaGlnPheArgGlnProArgArgIleArgLeu-87
 93-AlaArgGlnArgSerGlyGlyArgThrAspGlnAlaAla-105
 117-ProArgIleArgGlnLysGlnArgHisThrArg-127
 145-AlaGluHisArgAla-149
 170-CysIleArgLysGlnAsnLeu-176
 179-PheProSerArgArgGlyHisLeuArgHisGlnGlnArgArgIleGlyLys-195
 209-ArgPheProAspArgAsnGly-215
 225-IleArgIleArgLeu-229
 238-ProIleCysArgGlyThr-243
 254-ProTyrArgArgLysGlnPro-260
 280-ArgThrValArgThrAlaPheArgGlnArgAsnGlnIle-292

a297**AMPHI Regions** - AMPHI

35-ArgThrGluArgVal-39
 69-GlnProGlyAspSerLeuAlaAspValLeuAla-79
 86-AspGluIleAlaArgIleThrGluLysTyr-95
 157-LeuProThrLeuArg-161
 199-LeuLysGluGlyAspAla-204
 272-LeuValTyrThrArgIleSerSer-279
 333-HisAlaAsnGlyValGluThrLeuTyrAlaHisLeuSerAlaPheSer-348

Antigenic Index - Jameson-Wolf

8-AlaLysHisArgLysTyrAla-14
 32-SerThrGluArgThrGluArgValArgProGlnArgValGluGlnLysLeuPro-49
 52-SerTrpGlyGlySerGly-57
 67-AlaValGlnProGlyAspSerLeuAla-75
 78-LeuAlaArgSerGlyMetAlaArgAspGluIleAlaArgIleThrGluLysTyrGlyGlyGluAlaAspLeu
 ArgHisLeuArgAlaAspGlnSerVal-110
 115-GlyGlyAspGlyGlyAlaArgGluVal-123
 127-ThrAspGluAspGlyGluArgAsnLeuValAlaLeuGluLysLysGlyGlyIleTrpArgArgSerAlaSer
 GluAlaAspMetLysVal-156

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167-ThrSerAlaArgGlySerLeuAlaArgAlaGluValProValGluIleArgGluSerLeuSer-187
 194-PheSerLeuAspGlyLeuLysGluGlyAspAlaVal-205
 228-GluValValLysGlyGlyThrArgHis-236
 240-TyrTyrArgSerAspLysGluGlyGlyGlyGlyAsnTyrTyrAspGluAspGlyArgValLeuGlnGlu
 LysGlyGlyPheAsn-268
 276-ArgIleSerSerProPheGlyTyr-283
 295-HisThrGlyIleAspTyrAla-301
 303-ProGlnGlyThrProValArgAlaSerAlaAspGly-314
 318-PheLysGlyArgLysGlyGlyTyrGly-326
 333-HisAlaAsnGlyValGlu-338
 350-AlaGluGlyAsnValArgGlyGlyGlu-358
 365-SerThrGlyArgSerThrGlyProHisLeu-374
 376-TyrGluAlaArgIleAsnGlyGlnProValAsn-386
 393-ProThrProGluLeuThrGlnAlaAspLysAlaAla-404
 408-GlnLysGlnLysAlaAspAlaLeu-415
 426-ValSerGlnSerAsp-430

Hydrophilic Regions - Hopp-Woods

8-AlaLysHisArgLysTyrAla-14
 32-SerThrGluArgThrGluArgValArgProGlnArgValGluGlnLysLeu-48
 68-ValGlnProGlyAspSerLeuAla-75
 82-GlyMetAlaArgAspGluIleAlaArgIleThrGluLysTyrGlyGlyGluAlaAspLeuArgHisLeuArgA
 laAspGln-108
 117-AspGlyGlyAlaArgGlu-122
 127-ThrAspGluAspGlyGluArgAsnLeuValAlaLeuGluLysLysGlyGlyIleTrpArgArgSerAlaSer
 GluAlaAspMetLysVal-156
 167-ThrSerAlaArgGlySerLeuAlaArgAlaGluValProValGluIleArgGluSerLeu-186
 194-PheSerLeuAspGlyLeuLysGluGlyAspAlaVal-205
 228-GluValValLysGlyGlyThrArg-235
 242-ArgSerAspLysGluGlyGlyGly-249
 253-TyrTyrAspGluAspGlyArgValLeuGlnGluLysGlyGlyPhe-267
 306-ThrProValArgAlaSerAla-312
 319-LysGlyArgLysGlyGlyTyr-325
 350-AlaGluGlyAsnValArgGlyGlyGlu-358
 366-ThrGlyArgSerThrGly-371
 378-AlaArgIleAsnGly-382
 396-GluLeuThrGlnAlaAspLysAlaAla-404
 408-GlnLysGlnLysAlaAspAlaLeu-415

a298**AMPHI Regions - AMPHI**

6-SerLeuPheAlaSerIleLeuMetSerAlaLeuIleAla-18
 26-IleAsnAlaTyrTrpGlnGln-32
 42-ProLeuAlaAlaTyr-46
 62-LeuSerAspGlyIleLysAlaPhe-69
 82-GlySerAlaAspMetPro-87
 134-ValGlnLysSerLeuLys-139
 157-SerTyrProSerPhePheAspTrpProLysThrIleGluGluThrLeuLysLysHisProGlu-177
 188-AsnAspProTrpAsp-192
 208-AlaGlnGluTyrLeuLysArgValAspArgIleLeuGluAlaAlaHis-223
 245-GlnMetArgTyrLeuAspLysLeuLeuSerGluTyrLeu-257
 276-ArgTyrThrAspSer-280
 308-AlaLysIleMetGluLys-313

Antigenic Index - Jameson-Wolf

22-SerGlnAsnProIleAsnAlaTyr-29

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34-TyrHisArgAsnSerProLeuGluPro-42
 47-GlyTrpTrpArgSerGlyAlaAlaLeuGlnGlu-57
 70-LeuSerGlyGluThrProProThrAlaGlnAspGlyGlySerAlaAspMetProSerGluAlaAlaAlaProGluThrAlaProGlnThrGlyGluThrGluTrpLysGlnAsnThrGlu-109
 114-ArgThrGlyAspLys-118
 136-LysSerLeuLysGlnGlnTyrGlyIleGluSerValAsnLeuSerLysGlnSerThrGly-155
 162-PheAspTrpProLysThrIleGluGluThrLeuLysLysHisProGlu-177
 186-GlyProAsnAspProTrp-191
 194-ProValGlyLysArgTyrLeu-200
 203-AlaSerAspGluTrpAla-208
 211-TyrLeuLysArgValAspArgIleLeuGlu-220
 236-TyrMetLysLysAlaLysLeuAspGlyGlnMetArgTyrLeuAsp-250
 270-LeuSerGlyGlyLysAspArgTyrThrAspSerValAsnValAsnGlyLysProValArgTyrArgSerLysAspGlyIle-296
 318-ProSerThrGlnProSerSerThrGlnPro-327

Hydrophilic Regions - Hopp-Woods

73-GluThrProProThrAlaGlnAspGlyGlySerAlaAspMetProSerGluAlaAlaAlaProGluThrAlaProGlnThrGlyGluThrGluTrpLysGlnAsnThrGlu-109
 148-AsnLeuSerLysGlnSerThr-154
 166-LysThrIleGluGluThrLeuLysLysHisProGlu-177
 211-TyrLeuLysArgValAspArgIleLeuGlu-220
 236-TyrMetLysLysAlaLysLeuAspGlyGlnMetArgTyrLeuAsp-250
 271-SerGlyGlyLysAspArgTyrThrAsp-279
 281-ValAsnValAsnGlyLysProValArgTyrArgSerLysAspGlyIle-296
 319-SerThrGlnProSerSerThrGlnPro-327

a299**AMPHI Regions - AMPHI**

54-AlaSerProTrpMetLysLysLeuGlnSerValAlaGlnGlySer-68
 71-ThrPheArgIleLeuGlnIleGly-78
 85-AspPhePheThrAspSerLeuArgLysArgLeuGlnLysThrTrpGly-100
 238-GlnLeuThrGlnTrpSerLysTrp-245
 247-AlaAspArgMetAsnAspLeuAlaGlnThr-256
 281-GluGlnLysTrpLeuAspThrValArgGlnIleArgAspSerLeu-295
 307-GluSerLeuLysAsnThrLeu-313
 322-ArgLeuThrGluValGlnGlnMetGlnArgArgIleAlaArgGln-336
 375-TyrGlnArgSerAlaGluMetLeuAlaAspSerLeuGluGluLeuValArgSerAlaAlaIleArg-396

Antigenic Index - Jameson-Wolf

1-MetAsnProLysHis-5
 35-ProSerAlaProTyrThrAspThrAsnGlyLeu-45
 48-AspTyrGlyAsnAlaSerAlaSerProTrpMetLysLysLeuGln-62
 65-AlaGlnGlySerGlyGluThr-71
 78-GlyAspSerHisThrAlaGlyAspPhePheThrAspSerLeuArgLysArgLeuGlnLysThrTrpGlyAspGlyGly-103
 110-AlaAsnValLysGlyGlnArg-116
 121-ArgHisAsnGlyAsnTrpGlnSerLeuThrSerArgAsnAsnThrGlyAspPheProLeu-140
 157-AlaSerAspGlyIleAlaSerLysGlnArgVal-167
 184-GlyAsnThrValSerAlaAsnGlyGlyGly-193
 221-GluAsnProAlaGlyGly-226
 241-GlnTrpSerLysTrpArgAlaAspArgMetAsnAspLeuAlaGlnThrGlyAla-258
 266-GlyThrAsnGluAlaPheGlyAspAsnIleAspIleAlaAspThrGluGlnLysTrp-284
 286-AspThrValArgGlnIleArgAspSerLeuPro-296
 305-AlaProGluSerLeuLysAsnThr-312
 319-ArgProValArgLeuThrGluValGlnGlnMetGlnArgArgIleAlaArgGlnGlyGlnThr-339

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361-GlyTrpAlaAlaLysAspGlyVal-368
 371-SerAlaLysGlyTyrGlnArgSerAlaGluMetLeuAlaAspSerLeuGluGluLeuValArg-391
 393-AlaAlaIleArgGln-397

Hydrophilic Regions - Hopp-Woods

67-GlySerGlyGluThr-71
 90-SerLeuArgLysArgLeuGlnLysThrTrpGly-100
 112-ValLysGlyGlnArg-116
 130-ThrSerArgAsnAsnThrGly-136
 159-AspGlyIleAlaSerLysGlnArgVal-167
 245-TrpArgAlaAspArgMetAsnAsp-252
 270-AlaPheGlyAspAsnIleAspIleAlaAspThrGluGlnLysTrp-284
 288-ValArgGlnIleArgAspSerLeuPro-296
 319-ArgProValArgLeuThrGlu-325
 327-GlnGlnMetGlnArgArgIleAlaArgGlnGly-337
 363-AlaAlaLysAspGlyVal-368
 374-GlyTyrGlnArgSerAlaGluMetLeuAlaAspSerLeuGluGluLeuValArg-391
 393-AlaAlaIleArgGln-397

a302**AMPHI Regions - AMPHI**

20-AspGlyArgPheLeuArgThrValGluTrpLeuGlyAsnMetLeuProHisPro-37
 81-ValValSerLeuLeuAspAlaAspGlyLeuIleLysIleLeuThrHisThrValLysAsnPheThrGlyPheAlaProLeuGlyThrValLeuValSerLeu-114
 127-SerAlaLeuMetArg-131
 176-GlyArgHisProLeuAlaGlyLeuAlaAlaPheAlaGlyValSerGly-192
 201-GlyThrIleAspProLeuLeuAlaGlyIleThrGlnGlnAla-214
 239-ValIleAlaLeuIleGly-244
 271-ArgHisSerAsnGluIle-276
 294-LeuSerAlaLeuLeuAlaTrp-300
 308-IleLeuArgHisProGluThrGly-315
 341-TyrGlyArgValThrArgSerLeuArgGlyGluGlnGluValValAsnAlaMetAlaGluSerMetSer-363
 378-PheValAlaPhePheAsnTrpThrAsnIleGlyGlnTyrIle-391
 448-AlaProGluValIleGlnAlaAlaTyrArgIleGlyAspSerValThrAsnIleIleThrProMetMetSerTyrPheGlyLeuIleMetAla-478
 505-IleAlaTrpIleAlaLeuPheCysIle-513

Antigenic Index - Jameson-Wolf

8-LysGluLysGlnMetSerGlnThrAspThrGlnArgAspGlyArgPhe-23
 61-SerValProAspProArgProValGlyAlaLysGlyArgAlaAspAspGlyLeu-78
 85-LeuAspAlaAspGlyLeu-90
 119-IleAlaGluLysSerGly-124
 134-LeuThrLysSerProArgLysLeuThr-142
 152-LeuSerAsnThrAlaSerGlu-158
 175-LeuGlyArgHisProLeu-180
 250-LysIleValGluProGlnLeuGlyProTyrGlnSerAspLeuSerGlnGluGluLysAspIleArgHisSerAsnGluIleThrProLeuGluTyrLys-282
 304-ProAlaAspGlyIleLeuArgHisProGluThrGlyLeuValSer-318
 343-ArgValThrArgSerLeuArgGlyGluGlnGluVal-354
 402-ValGlyLeuGlyGly-406
 482-LysTyrLysLysAspAlaGlyVal-489

Hydrophilic Regions - Hopp-Woods

8-LysGluLysGlnMetSerGlnThrAspThrGlnArgAspGlyArgPhe-23
 63-ProAspProArgProValGlyAlaLysGlyArgAlaAspAspGlyLeu-78

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85-LeuAspAlaAspGlyLeu-90
119-IleAlaGluLysSerGly-124
136-LysSerProArgLysLeu-141
263-LeuSerGlnGluGluLysAspIleArgHisSerAsnGlu-275
307-GlyIleLeuArgHisProGlu-313
343-ArgValThrArgSerLeuArgGlyGluGlnGluVal-354
482-LysTyrLysLysAspAlaGly-488
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AMPHI Regions - AMPHI

10-LeuMetMetGlyLeuValGluGlyPheThrGluPheLeuPro-23
33-PheGlyAsnLeuIleAspPheHisSer-41
66-PheSerAsnValLeuHis-71
93-AlaAlaValMetGly-97
99-LeuPheGlyLysGlnIleLysGluTyrLeuPhe-109
141-AspValAspAlaLeuArgProIleAspAla-150
155-ValAlaGlnValPheAla-160
202-AlaTyrAspValLeuLysHisTyrArgPhePheThrLeuHis-215
222-IleGlyPheValAlaAlaPheValSer-230
235-ValLysAlaLeuLeuArg-240

Antigenic Index - Jameson-Wolf

40-HisSerAsnHisLys-44
61-GluTyrArgGlnArgPheSerAsn-68
72-GlyValGlyLysAspArgLysAlaAsn-80
128-ValGluLysArgGlnSerArgAlaGluProLysIleValAsp-141
143-AspAlaLeuArgProIleAsp-149
163-ProGlyThrSerArgSerGlySer-170
180-IleGluArgLysThrAlaThr-186
241-PheValSerLysLysAsnTyr-247

Hydrophilic Regions - Hopp-Woods

62-TyrArgGlnArgPhe-66
73-ValGlyLysAspArgLysAlaAsn-80
128-ValGluLysArgGlnSerArgAlaGluProLysIleValAsp-141
143-AspAlaLeuArgProIleAsp-149
165-ThrSerArgSerGlySer-170
180-IleGluArgLysThrAlaThr-186
242-ValSerLysLysAsn-246

a308-2**AMPHI Regions - AMPHI**

6-PheTyrArgIleLeuGlyValAlaAspAsnLeuTyrProTyrLeu-20
27-ThrIleIleAlaGlyLeu-32
64-AlaLeuGluLeuLeuArgAlaGlnAsp-72
83-AlaGluMetAlaArgAlaSerGlu-90
101-LeuAlaAspPheValHisProIleGlyAsnIleGlyAlaCys-114
131-SerMetArgThrLeuAlaSerValValHisGlyPheGlyAsp-144
172-LeuAlaHisLeuAspAsnMetLysArgValThrGlu-183

Antigenic Index - Jameson-Wolf

39-TrpGluArgArgMetMetVal-45
68-LeuArgAlaGlnAspIleGluThr-75
80-SerLysGlyAlaGluMetAlaArgAlaSerGluThrAlaTyrAlaArgAspGluVal-98
118-GlyThrPheLysThrAspGlyMet-125
142-PheGlyAspAsnLeuLeu-147
149-ArgAlaAlaAspValValLeuLysGluArgArgArgLeu-161

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166-ArgGluThrProLeu-170
176-AspAsnMetLysArgValThrGluMetGly-185
195-MetTyrArgLysProGlnThrAlaAspAspIleVal-206
219-IleAspThrProAspSerAlaGlu-226

Hydrophilic Regions - Hopp-Woods

39-TrpGluArgArgMetMetVal-45
68-LeuArgAlaGlnAspIleGluThr-75
81-LysGlyAlaGluMetAlaArgAlaSerGlu-90
92-AlaTyrAlaArgAspGluVal-98
120-PheLysThrAspGly-124
149-ArgAlaAlaAspValValLeuLysGluArgArgArgLeu-161
176-AspAsnMetLysArgValThrGlu-183
195-MetTyrArgLysProGlnThrAlaAspAspIleVal-206
220-AspThrProAspSerAlaGlu-226

a311-1**AMPHI Regions - AMPHI**

7-SerHisTrpArgValLeuAlaGluLeuAlaAspGlyLeuProGlnHisValSerGlnLeuAlaArgMetAlaAsp-31
37-LeuAsnGlyPheTrpGlnGlnMetProAlaHisIleArgGlyLeuLeuArg-53
55-HisAspGlyTyrTrpArgLeuValArgProLeuAlaValPheAspAlaGluGlyLeuArgGluLeuGly-77
124-ArgGlnGlyArgLysTrpSerHisArgLeu-133
165-ArgAlaLeuSerArgLeu-170
219-ValGluAsnAlaAlaSerValGlnSerLeuPheGln-230
245-GluThrLeuLeuAlaGlu-250
291-PheGluGlyThrValLysGlyValAspGlyGlnGlyVal-303
362-ThrValGlySerAlaProTyrArgAspLeuSerProLeu-374
376-AlaGluTrpAlaGluLysVal-382
391-CysAlaValCysGlyGluPheLysLys-399
426-TyrArgHisProGluGluHisGlySerAspArgTrpPheAsnAlaLeuGlySer-443
493-AsnLeuAsnArgHisAla-498
511-AlaValAlaSerGlyMetMetAspAlaValCys-521
550-AlaAlaLysValAlaGluAlaLeuProPro-559
576-HisGlyLeuLeuAsnLeu-581

Antigenic Index - Jameson-Wolf

28-ArgMetAlaAspMetLysProGlnGln-36
50-GlyLeuLeuArgGlnHisAspGlyTyr-58
71-GluGlyLeuArgGluLeuGlyGluArgSerGlyPhe-82
86-LeuLysHisGluCysAlaSerSerAsnAspGluIleLeuGlu-99
102-ArgIleAlaProAspLysAlaHisLys-110
116-HisLeuGlnSerLysGlyArgGlyArgGlnGlyArgLysTrpSerHisArgLeuGlyGlu-135
145-PheAspArgProGlnTyrGluLeuGlySer-154
162-AlaCysArgArgAlaLeuSer-168
174-ThrGlnIleLysTrpProAsn-180
182-LeuValValGlyArgAspLysLeuGly-190
196-ThrValArgThrGlyGlyLysThrVal-204
215-LeuProLysGluValGluAsn-221
231-ThrAlaSerArgArgGlyAsnAlaAsp-239
258-TyrAlaArgAspGlyPheAla-264
272-AlaAlaAsnArgAspHisGlyLys-279
284-LeuArgAspGlyGluThrValPhe-291
293-GlyThrValLysGlyValAspGlyGlnGly-302
307-GluThrAlaGluGlyLysGlnThrValSerGlyGluIleSerLeuArgSerAspAspArgProValSerValProLysArgArgAspSerGluArg-339

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344-AspGlyGlyAsnSerArgLeu-350
 364-GlySerAlaProTyrArgAspLeuSerProLeuGly-375
 378-TrpAlaGluLysValAspGlyAsnValArgIle-388
 395-GlyGluPheLysLysAlaGlnValGln-403
 405-GlnLeuAlaArgLysIleGlu-411
 424-AsnHisTyrArgHisProGluGluHisGlySerAspArgTrp-437
 440-AlaLeuGlySerArgArgPheSerArgAsnAla-450
 464-AlaLeuThrAspAspGlyHisTyrLeuGly-473
 483-MetLysGluSerLeuAla-488
 492-AlaAsnLeuAsnArgHisAlaGlyLysArgTyrPro-503
 529-GlyArgLeuLysGluLysThrGlyAlaGlyLysProVal-541
 547-GlyGlyGlyAlaAlaLysValAlaGlu-555
 565-AsnThrValArgValAlaAsp-571
 584-AlaGluGlyGlyGluSerGluHisThr-592

Hydrophilic Regions - Hopp-Woods

28-ArgMetAlaAspMetLysProGlnGln-36
 50-GlyLeuLeuArgGlnHis-55
 71-GluGlyLeuArgGluLeuGlyGluArgSerGlyPhe-82
 86-LeuLysHisGluCysAlaSerSerAsnAspGluIleLeuGlu-99
 102-ArgIleAlaProAspLysAlaHisLys-110
 118-GlnSerLysGlyArgGlyArgGlnGlyArgLysTrpSerHisArgLeuGlyGlu-135
 162-AlaCysArgArgAlaLeuSer-168
 183-ValValGlyArgAspLysLeuGly-190
 196-ThrValArgThrGlyGlyLys-202
 217-LysGluValGluAsn-221
 232-AlaSerArgArgGlyAsnAlaAsp-239
 259-AlaArgAspGlyPhe-263
 272-AlaAlaAsnArgAspHisGlyLys-279
 285-ArgAspGlyGluThrValPhe-291
 293-GlyThrValLysGlyValAspGly-300
 307-GluThrAlaGluGlyLysGlnThrValVal-316
 320-IleSerLeuArgSerAspAspArgProValSerValProLysArgArgAspSerGluArg-339
 346-GlyAsnSerArgLeu-350
 367-ProTyrArgAspLeuSer-372
 378-TrpAlaGluLysValAspGlyAsnVal-386
 395-GlyGluPheLysLysAlaGlnVal-402
 405-GlnLeuAlaArgLysIleGlu-411
 424-AsnHisTyrArgHisProGluGluHisGlySer-434
 442-GlySerArgArgPheSerArg-448
 464-AlaLeuThrAspAspGlyHis-470
 483-MetLysGluSerLeuAla-488
 493-AsnLeuAsnArgHisAlaGlyLysArgTyrPro-503
 529-GlyArgLeuLysGluLysThrGlyAlaGlyLysProVal-541
 549-GlyAlaAlaLysValAlaGlu-555
 565-AsnThrValArgValAlaAsp-571
 585-GluGlyGlyGluSerGluHisThr-592

a312**AMPHI Regions - AMPHI**

6-GlyGluIleLeuGluThrValLysMetValAla-16
 44-GlnAsnIleTyrAsnLysIleThrThrValGlyLys-55
 82-IleAlaGlnIleAlaAlaAlaThr-89
 95-ValSerValAlaGlnThrLeuAspLysAlaAlaLys-106
 109-GlyValSerPheIleGlyGlyPheSerAlaLeuValGln-121
 133-ArgSerIleProGluAlaMetLysThr-141

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167-GlyGluThrIleLysArgThr-173
 182-GlyCysAlaLysIleValValPheCys-190
 230-SerAspAlaThrThrLeuThrGluValAlaGluValValLysLys-244
 249-IleThrArgValGlyGluLeuIleGlyArgGluAlaSerLys-262
 281-ValGlyAspSerValAlaArgIleLeuGluGluMetGly-293
 309-LeuAsnAspAlaVal-313
 322-SerAlaValGlyGlyLeuSerGly-329
 349-LeuThrLeuAspLysLeuGluAlaMetThrAla-359
 374-ThrProAlaHisThrIleSerGlyIleIle-383
 409-ValGlyAspSerValGluPheGlyGlyLeuLeuGly-420

Antigenic Index - Jameson-Wolf

4-GlnSerGlyGluIleLeuGlu-10
 13-LysMetValAlaAspGlnAsnPheAspVal-22
 35-IleSerThrAspIleAspVal-41
 52-ThrValGlyLysAspLeuValAla-59
 89-ThrHisAlaAspSer-93
 100-ThrLeuAspLysAlaAlaLys-106
 121-GlnLysGlyMetSerProSerAspGluValLeu-131
 134-SerIleProGluAlaMetLysThrThrAsp-143
 152-GlySerThrArgAla-156
 161-AspAlaValArgLeuAlaGlyGluThrIleLysArgThrAlaGluIleThr-177
 192-AlaValGluAspAsnProPhe-198
 204-HisGlySerGlyGluAlaAspAla-211
 225-AlaAlaLeuGluAsnSerAspAla-232
 237-GluValAlaGluValValLys-243
 251-ArgValGlyGluLeuIleGlyArgGluAlaSerLys-262
 280-AlaValGlyAspSerValAlaArgIleLeuGlu-290
 311-AspAlaValLysLysGlyGlyMet-318
 334-ValSerGluAspGluGlyMet-340
 352-AspLysLeuGluAla-356
 370-ValProGlyAspThrProAla-376
 383-IleAlaAspGluAlaAla-388
 392-IleAsnSerLysThrThrAla-398
 405-ThrGlyLysThrValGlyAspSerValGlu-414
 426-ProValLysGluGlySerCys-432
 435-PheValAsnArgGlyGlyArgIle-442
 447-GlnSerMetLysAsn-451

Hydrophilic Regions - Hopp-Woods

18-GlnAsnPheAspVal-22
 35-IleSerThrAspIleAspVal-41
 52-ThrValGlyLysAspLeuValAla-59
 100-ThrLeuAspLysAlaAlaLys-106
 123-GlyMetSerProSerAspGluValLeu-131
 134-SerIleProGluAlaMetLysThrThrAsp-143
 161-AspAlaValArgLeuAlaGlyGluThrIleLysArgThrAlaGluIleThr-177
 192-AlaValGluAspAsnPro-197
 207-GlyGluAlaAspAla-211
 225-AlaAlaLeuGluAsnSerAspAla-232
 237-GluValAlaGluValValLys-243
 251-ArgValGlyGluLeuIleGlyArgGluAlaSerLys-262
 284-SerValAlaArgIleLeuGlu-290
 311-AspAlaValLysLysGlyGlyMet-318
 334-ValSerGluAspGluGlyMet-340

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352-AspLysLeuGluAla-356
 383-IleAlaAspGluAlaAla-388
 408-ThrValGlyAspSerValGlu-414
 426-ProValLysGluGlySerCys-432
 438-ArgGlyGlyArgIle-442
 447-GlnSerMetLysAsn-451
a313-2
AMPHI Regions - AMPHI
 27-GlyMetAspAspProArgThrTyrGlySerGly-37
 41-AlaThrAsnValLeu-45
 60-AspAlaAlaLysGly-64
 66-ValAlaValLeuLeuAlaArgValLeuGlnGluPro-77
 88-ValAlaLeuAlaAlaLeuValGlyHisMetTrpPro-99
 143-SerLeuAlaAlaLeuThrAlaThrIleAlaAlaProLeuAlaAla-157

Antigenic Index - Jameson-Wolf
 26-TyrGlyMetAspAspProArgThrTyrGlySerGlyAsnProGlyAla-41
 46-ArgSerGlyLysLysLysAlaAla-53
 73-ValLeuGlnGluProLeuGlyLeuSerAspSerAla-84
 104-PheLysGlyGlyLysGlyVal-110
 180-ArgHisLysSerAsn-184
 189-IleLysGlyLysGluSerLysIleGlyGluLysArg-200

Hydrophilic Regions - Hopp-Woods
 26-TyrGlyMetAspAspProArgThrTyrGly-35
 46-ArgSerGlyLysLysLysAlaAla-53
 105-LysGlyGlyLysGlyVal-110
 189-IleLysGlyLysGluSerLysIleGlyGluLysArg-200
a401

AMPHI Regions - AMPHI
 44-SerGlyValLysProTyrAsnAlaLeu-52
 65-CysTyrAsnCysHisSerGlnMetIleArgProPheArg-77
 112-ValGlyGlyArgTyrSerAspGluTrpHisArgIle-123
 157-MetLysAlaLeuArgLysValGlyThr-165
 172-IleAlaLysAlaProGluAlaLeu-179

Antigenic Index - Jameson-Wolf
 5-GlnLeuAlaGluGluLysIle-11
 38-AlaAlaThrGlnProAlaSerGlyValLysProTyrAsn-50
 55-AlaGlyArgAspIleTyrIleArgGluGlyCysTyrAsnCysHis-69
 74-ArgProPheArgAlaGluThrGluArgTyrGlyHis-85
 90-GlyGluSerValTyr-94
 98-PheGlnTrpGlySerLysArgThrGlyProAspLeuAlaArgValGlyGlyArgTyrSerAspGluTrpHis-121
 125-LeuLeuAsnProArgAspValValProGluSerAsnMetPro-138
 146-AsnLysValAspValAspAla-152
 158-LysAlaLeuArgLysValGlyThrProTyrSerAspGluGluIleAlaLysAlaProGlu-177
 179-LeuAlaAsnLysSerGluLeuAspAla-187

Hydrophilic Regions - Hopp-Woods
 5-GlnLeuAlaGluGluLysIle-11
 76-PheArgAlaGluThrGluArgTyrGly-84
 101-GlySerLysArgThrGlyProAspLeuAlaArgValGlyGlyArgTyrSerAspGluTrpHis-121
 127-AsnProArgAspValValPro-133
 146-AsnLysValAspValAspAla-152

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158-LysAlaLeuArgLysValGly-164
 167-TyrSerAspGluGluIleAlaLysAlaProGlu-177
 179-LeuAlaAsnLysSerGluLeuAspAla-187

a402**AMPHI Regions - AMPHI**

18-PheLeuSerGlyLeu-22
 85-AlaGlyIleAlaAspPhe-90
 100-ThrGlyPheSerGlyPheValHis-107
 117-AlaValValArgGlyLeu-122
 136-LysSerGlyArgGln-140
 146-PheAlaAsnValAlaGly-151
 218-ValPheGlnAsnIleAlaAspArgProAspArgLeuIle-230
 261-AspValPheAsnSerValAsnGlyIleGlu-270
 279-LysSerGlyIleArg-283
 294-SerTrpAlaArgValLeuSerAlaIleProGluMetGln-306
 344-ArgLysTrpLeuArgArgHisPro-351
 376-AlaGluPheLeuLysGlnValGlnSerHisLeu-386
 398-HisSerProHisAlaPheAlaThrAlaValHisSerIlePro-411
 437-GlnArgLeuSerArgLeu-442
 460-AlaAlaGlnLysVal-464

Antigenic Index - Jameson-Wolf

4-ValAsnThrLysProAsnThrSer-11
 66-ArgIleCysArgSerArgPheValAsp-74
 130-ValGlyThrAspGlyAsnLysSerGlyArgGlnValSer-142
 222-IleAlaAspArgProAspArgLeuIleGluAsnLysHisGly-235
 240-TyrHisArgAspGlyAspLysValVal-248
 264-AsnSerValAsnGlyIleGluArg-271
 277-SerLeuLysSerGlyIleArgArg-284
 321-IleAlaAspGluProGln-326
 331-LeuGlnAspLysArgValGluIleValLeuAspAspGlyArgLysTrpLeuArgArgHisProAspGluLys
 PheAsp-356
 385-HisLeuThrProAspGly-390
 429-PheProAsnLysGluLeuLeuLysGlnArgLeuSer-440
 444-TrpProGluSerGlyArgHisValPheAspSerSerThrVal-457
 472-MetThrGluProSerAlaGly-478
 481-ValIleThrAspAspAsnMet-487
 489-ValGluTyrLysTyrGlyArgGlyIle-497

Hydrophilic Regions - Hopp-Woods

131-GlyThrAspGlyAsnLysSerGlyArgGlnVal-141
 222-IleAlaAspArgProAspArgLeuIleGluAsnLysHis-234
 241-HisArgAspGlyAspLysValVal-248
 278-LeuLysSerGlyIleArg-283
 321-IleAlaAspGluProGln-326
 331-LeuGlnAspLysArgValGluIleValLeuAspAspGlyArgLysTrpLeuArgArgHisProAspGluLys
 PheAsp-356
 430-ProAsnLysGluLeuLeuLysGlnArgLeuSer-440
 446-GluSerGlyArgHisValPhe-452
 473-ThrGluProSerAlaGly-478
 481-ValIleThrAspAspAsnMet-487

a501**AMPHI Regions - AMPHI**

63-ValGluValLeuGlnGluLeuPheArgGlnTyrArgValAlaArgGlnLeu-79

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88-ValPheAlaAlaPheGlnAlaVal-95

97-PheGlnGlyPheAspAsnGlyPhe-104

126-AlaAspAlaPheGlnGly-131

139-ValPheGluValValGlyAspIleThrArgArgThrThrGluAla-153

183-AspGlyPheThrArgIleAsnArgCysGlyGlnCys-194

196-HisAlaPheGlyAspPheIleAsp-203

252-AlaPheAlaGlyGlnVal-257

270-HisHisAspPheTyrArgCysPheArgHisValValGlnSerAsnIleGlyAsnLeu-288

306-TyrGlyAsnPheLeuThrValPheGlnGlnPheGlyCys-318

364-GlyAsnGlnTyrValAlaGlyPhe-371

438-AlaSerProPheAsp-442

458-ArgGlnLeuGlyAspPhe-463

511-PheGlnArgGlyPheGluHisIleGlu-519

528-TyrAspValPheAlaGln-533

Antigenic Index - Jameson-Wolf

6-LeuThrAlaAspAla-10

17-AlaAlaGlyGlyAspGlyLysVal-24

26-HisHisPheAspGly-30

46-ValGluThrGluGlyGln-51

56-ValArgAlaAspGlyGluAlaValGluVal-65

100-PheAspAsnGlyPhe-104

108-GlnSerAlaAspGluArgAsnHisAspPheAsnValGlyGln-121

144-GlyAspIleThrArgArgThrThrGluAlaGlnHis-155

179-GlyHisThrAspAspGlyPheThrArgIleAsnArgCysGlyGlnCys-194

202-IleAspValGluValAspArgGlyArgValThrGlyAspThrAlaGlyAsnPhe-219

230-GlnGlnGlyPheGlyValAspThrAspLeuAlaValAspAspLysPheHisThrArgGlnAlaAsp-251

257-ValGlyGluAlaGluCysGluPheGly-265

269-ValHisHisAspPheTyrArgCys-276

294-GlyValAspGluAlaGly-299

320-AlaAlaAlaAspAsnGlyArgAsnThrGlnPheAlaArgAspAspGlyGlyValAlaGlyThrSerAlaPro
ValGlyHisAspGlyGlySer-350

405-ValAspArgLysAlaAla-410

420-PheAspGlyPheGlyThrGlyLeuGlnAsp-429

439-SerProPheAspValHisArg-445

477-AspIleAspValGlyTyr-482

490-ValGlyLysAsnHisPheAsp-496

502-PheAlaGlnAspGlyArgPhe-508

512-GlnArgGlyPheGluHis-517

535-ValGlySerAspLysAspAspLeuVal-543

548-GlyIleGluGlyGluHisHisThr-555

Hydrophilic Regions - Hopp-Woods

6-LeuThrAlaAspAla-10

19-GlyGlyAspGlyLysVal-24

46-ValGluThrGluGlyGln-51

56-ValArgAlaAspGlyGluAlaValGluVal-65

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108-GlnSerAlaAspGluArgAsnHisAsp-116
 144-GlyAspIleThrArgArgThrThrGluAlaGlnHis-155
 179-GlyHisThrAspAspGlyPheThrArgIleAsnArg-190

202-IleAspValGluValAspArgGlyArgValThrGlyAspThr-215

237-ThrAspLeuAlaValAspAspLysPheHisThrArgGlnAlaAsp-251
 257-ValGlyGluAlaGluCysGluPheGly-265
 294-GlyValAspGluAlaGly-299
 323-AspAsnGlyArgAsnThrGlnPheAlaArgAspAspGlyGlyVal-337
 344-ValGlyHisAspGly-348
 405-ValAspArgLysAlaAla-410
 535-ValGlySerAspLysAspAspLeuVal-543
 549-IleGluGlyGluHisHisThr-555

a502-1**AMPHI Regions - AMPHI**

6-AsnLeuPheGlnPheLeuAlaVal-13
 26-GlyAlaValAspAlaLeuLysGlnPheAsnAsnAspAlaAspGlyIleSerGlySerPheThrGln-47
 98-GlnValThrLysSerSerGlnAsp-105

Antigenic Index - Jameson-Wolf

32-LysGlnPheAsnAsnAspAlaAspGlyIleSerGlySer-44
 48-ThrValGlnSerLysLysLysThrGlnThrAlaHisGlyThr-61
 74-TyrThrSerProTyrLysGlnThrIle-82
 98-GlnValThrLysSerSerGlnAspGlnAlaIleGlyGlySerPro-112
 116-LeuSerAsnLysThrAlaLeuGluSerSerTyrThrLeuLysGluAspGlySerSerAsnGly-136
 142-AlaThrProLysArgAsnAsnAlaGly-150
 158-PheLysGlyGlyAsn-162
 167-GlnLeuLysAspSerPheGlyAsnGlnThr-176
 184-AsnThrAsnProGlnLeuSerArgGlyAlaPhe-194
 196-PheThrProProLysGlyValAspVal-204

Hydrophilic Regions - Hopp-Woods

34-PheAsnAsnAspAlaAspGlyIle-41
 49-ValGlnSerLysLysLysThrGlnThr-57
 100-ThrLysSerSerGlnAspGlnAlaIle-108
 126-TyrThrLeuLysGluAspGlySerSerAsn-135
 143-ThrProLysArgAsnAsnAla-149
 167-GlnLeuLysAspSerPheGly-173

a503-1**AMPHI Regions - AMPHI**

6-TyrArgGluAlaAsnThrTrp-12
 96-SerSerThrSerAsnPheAlaSerAlaAlaGluMetArgSerLeu-110

Antigenic Index - Jameson-Wolf

4-SerLeuTyrArgGluAlaAsnThr-11
 26-ArgLysValSerCys-30
 32-ProAlaAsnAspAlaSerGlyArgSerSerAlaValAlaGluGluArgThrAlaThrGluMetSerAlaPro-
 roAla-57
 69-SerAlaSerSerCysSerGlyLysGlyValSer-79
 87-LeuProThrArgAlaSerSerAlaThrSerSerThrSerAsn-100
 105-AlaGluMetArgSerLeuArg-111
 113-LeuCysAlaArgAsnAlaArg-119

Hydrophilic Regions - Hopp-Woods

4-SerLeuTyrArgGlu-8
 35-AspAlaSerGlyArgSerSerAlaValAlaGluGluArgThrAlaThrGluMetSerAla-54
 73-CysSerGlyLysGlyValSer-79
 89-ThrArgAlaSerSer-93
 105-AlaGluMetArgSerLeuArg-111

a505**AMPHI Regions - AMPHI**

20-LeuThrAlaLeuLeuLysCysLeuSerLeuLeuProLeuSerCysLeu-35
 37-ThrLeuGlyAsnArg-41
 89-ProAlaPhePheArgLysProGluAspIleGluThrMetPheLysAlaValHisGlyTrpGluHisValGlnGlnAlaLeuAsp-116
 148-AlaMetTyrLysProProLysIleLysAlaIleAspLysIleMetGlnAlaGly-165
 178-IleGlnGlyValLysGlnIleIleLysAlaLeuArg-189
 210-GlyValTrpValAspPhePheGlyLysPro-219

Antigenic Index - Jameson-Wolf

38-LeuGlyAsnArgLeuGly-43
 50-LeuLysGluAspArgAlaArgIle-57
 62-ArgGlnAlaGlyMetAsnProAspProLysThrVal-73
 79-GluThrAlaLysGlyGlyLeu-85
 92-PheArgLysProGluAspIleGluThr-100
 114-AlaLeuAspLysHisGlu-119
 129-GlySerTyrAspLeuGlyGlyArgTyrIleSer-139
 142-LeuProPheProLeu-146
 150-TyrLysProProLysIleLysAlaIleAspLysIleMetGln-163
 165-GlyArgValArgGlyLysGlyLysThrAlaProThrSer-177
 183-GlnIleIleLysAlaLeuArgSerGlyGluAlaThr-194
 198-ProAspHisValProSerProGlnGluGlyGlyGluGlyVal-211
 242-CysGluArgLeuProGlyGlyGlnGly-250
 257-ProValGlnGlyGluLeuAsnGlyAspLysAlaHisAsp-269
 292-TyrAsnArgTyrLysMetPro-298

Hydrophilic Regions - Hopp-Woods

50-LeuLysGluAspArgAlaArgIle-57
 62-ArgGlnAlaGlyMetAsnProAspProLysThrVal-73
 79-GluThrAlaLysGlyGlyLeu-85
 92-PheArgLysProGluAspIleGluThr-100
 114-AlaLeuAspLysHisGlu-119
 151-LysProProLysIleLysAlaIleAspLysIleMetGln-163
 165-GlyArgValArgGlyLysGlyLysThrAlaPro-175
 183-GlnIleIleLysAlaLeuArgSerGlyGlu-192
 201-ValProSerProGlnGluGlyGlyGlu-209
 258-ValGlnGlyGluLeuAsnGlyAspLysAlaHisAsp-269

a506**AMPHI Regions - AMPHI**

6-GluValGlyArgValAlaHisCysGlyGlyGlyVal-17
 25-ArgValValHisGlnValGluGlnGlyAlaArg-35
 53-AlaValAspPheGlnArgArgPhe-60
 99-AlaThrArgThrValAspArgAspLeuAlaGluVal-110
 138-GlyAsnGluValAlaArgCys-144
 180-GlnValLysArgMetIleArgHisPhePheArg-190
 199-ValHisArgProPheArgLysLeuAlaAlaLeuAspGlyPheValGlnVal-215
 224-GlyAspAspPheGlyGlyPhePheValGlyGlnValPheAsnAlaLeuLeu-240
 313-PheValGlnValGlyGluLeuThrArgValAlaGlnGluGlu-326

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372-GlyPhePheAlaAspPheAlaGluAspPheGlyAlaGlyValPheGlyAspValValArgTyrGlyLysArg
 Thr-396
 408-PheGlyAspAspPheAlaHisGluValGlyGlu-418
 427-ArgGlnGlnArgAlaAlaArgThr-434

Antigenic Index - Jameson-Wolf

13-CysGlyGlyGlyValAla-18
 31-GluGlnGlyAlaArgLeu-36
 48-ProValArgArgValAlaValAspPheGlnArgArgPheGlyGluVal-63
 98-ArgAlaThrArgThrValAspArgAspLeuAlaGlu-109
 134-GlyAlaAspThrGlyAsnGluValAlaArgCysGluGly-146
 176-ProAsnPheGlyGlnValLysArgMetIle-185
 192-GlyPheArgHisAspLeuAspValHisArgProPheArgLys-205
 223-ValGlyAspAspPheGlyGly-229
 244-MetGluPheHisProLysThr-250
 259-ValGlyMetArgThrGluAla-265
 289-GlyGlnGlnArgProGluValProVal-297
 318-GluLeuThrArgValAlaGlnGluGluHisGlyArgValValAla-332
 343-GluLeuGlnArgLysThrAlaAsp-350
 362-CysHisGlyGlyGluThrGlyGlu-369
 377-PheAlaGluAspPheGly-382
 389-ValValArgTyrGlyLysArgThrGluArgAlaArgThr-401
 408-PheGlyAspAspPheAlaHisGluVal-416
 424-GlnIleLeuArgGlnGlnArgAlaAlaArgThrGlyGlyGln-437
 442-ValGlyAsnArgArgAlaVal-448
 458-PheGlyGlyXxxHisArgSerCysSer-466
 471-GlyGlnXxxGlyGlyLysArgLeuThrValArgPheGlyGlyLysArgIleArgAsnArgPheLeuAspCys
 AsnLysPheLeuGlu-499
 510-MetAspAlaThrIleArgGlnAspPheArgTyr-520

Hydrophilic Regions - Hopp-Woods

31-GluGlnGlyAlaArgLeu-36
 48-ProValArgArgValAlaValAspPheGlnArgArgPheGlyGlu-62
 98-ArgAlaThrArgThrValAspArgAspLeuAlaGlu-109
 136-AspThrGlyAsnGluValAlaArgCysGluGly-146
 180-GlnValLysArgMetIle-185
 195-HisAspLeuAspVal-199
 201-ArgProPheArgLys-205
 223-ValGlyAspAspPhe-227
 244-MetGluPheHisPro-248
 259-ValGlyMetArgThrGluAla-265
 291-GlnArgProGluVal-295
 318-GluLeuThrArgValAlaGlnGluGluHisGlyArgValValAla-332
 343-GluLeuGlnArgLysThrAlaAsp-350
 364-GlyGlyGluThrGlyGlu-369
 377-PheAlaGluAspPheGly-382
 390-ValArgTyrGlyLysArgThrGluArgAlaArgThr-401
 408-PheGlyAspAspPheAlaHisGluVal-416
 425-IleLeuArgGlnGlnArgAlaAlaArgThrGlyGly-436
 443-GlyAsnArgArgAlaVal-448
 473-XxxGlyGlyLysArgLeuThr-479
 482-PheGlyGlyLysArgIleArgAsnArgPheLeuAsp-493
 510-MetAspAlaThrIleArgGlnAspPheArgTyr-520

a513**AMPHI Regions - AMPHI**

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6-ThrGluTrpLeuHisGlyTrpValGlyAlaIleAsnAspProMetTrp-21
 23-TyrLeuValTyrXxxLeu-28
 48-GlyArgSerIleLysGlu-53
 66-GlyIleThrProPheGlnAlaPheValThrGlyLeuAla-78
 119-SerSerLeuAlaGlnLeuPheLysValArgAsp-129
 146-GlyLeuGlyGlnLysTrpLeuGlyVal-154
 176-IleAlaAspThrVal-180
 205-GlyGlyIleArgArgIleSerLysAlaAla-214
 243-ValPheGlyGlnIlePheSer-249
 259-GlyGlyLeuLeuGlyGlyLeuIle-266
 288-AlaProAsnAlaAlaAlaAla-295
 303-GlnGlyMetIleGlnMetLeuGlyValPheValAsp-314
 332-ProTyrGlyAspLeu-336
 347-ValSerGlnValGlyGlnTrp-353
 391-ThrAlaValPheArgMet-396
 403-TyrPheGlyAlaValAla-408
 423-IleMetAlaTrpIleAsnLeuValAlaIleLeuLeuLeuSer-436

Antigenic Index - Jameson-Wolf

1-MetAsnGluAsnPhe-5
 48-GlyArgSerIleLysGluMetLeuGlyGlyArgLysGlnGlyAspAspProHisGly-66
 126-LysValArgAspTyrAspAsnHisHisPheArgGlyGlyProAla-140
 208-ArgArgIleSerLysAlaAlaGlu-215
 273-GlyIleLysArgGlyLeuTyrSerAsnGluAlaGlyMetGlySerAlaProAsnAla-291
 295-AlaGluValLysHisProVal-301
 331-GlnProTyrGlyAspLeuSerGly
 375-AlaTyrAlaGluSerAsnVal-381
 444-ArgAspTyrThrAlaLysLeuLysMetGlyLysAspProGluPheLysLeuSerGluHisProGlyLeuLys
 ArgArgIleLysSerAspValTrp-475

Hydrophilic Regions - Hopp-Woods

48-GlyArgSerIleLysGluMetLeuGlyGlyArgLysGlnGlyAspAspProHisGly-66
 126-LysValArgAspTyrAspAsnHisHis-134
 208-ArgArgIleSerLysAlaAlaGlu-215
 273-GlyIleLysArgGlyLeuTyr-279
 295-AlaGluValLysHis-299
 450-LeuLysMetGlyLysAspProGluPheLysLeuSerGlu-462
 464-ProGlyLeuLysArgArgIleLysSer-472

a515-1**AMPHI Regions - AMPHI**

8-ArgAlaAlaGlyValAlaArgGlyLeuHisSerGluPheAlaArg-22
 59-AspValArgPhePheAlaGlnValGluGluIleGlyGlnAspPhePheAlaAspAla-77
 90-AlaGlyGluCysAlaAspGluValSerAspLysThr-101
 122-GluSerAlaGlnSerAlaAlaGlyGlyGlyLeuThrAspGlyPheGly-137
 176-CysGlyLysThrValGlyVal-182
 198-GlyValPheAspAla-202
 233-ValAlaAspValLeuArg-238
 251-PheGlyGlyValAlaGlyAspValGlyGlyGlyAlaAspGlyValAlaGlnGlyLeuPheGlyGluIleGly
 GlyAla-276

Antigenic Index - Jameson-Wolf

24-ValThrAlaGluGluIleAlaPhe-31
 38-HisGluAlaArgCysGlyGlyAsn-45
 51-IleAlaAlaAlaGluArgAlaGlyAsp-59
 67-GluGluIleGlyGln-71

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77-AlaValAspGlnGluThr-82
 84-LeuAlaValGluArgSerAlaGlyGluCysAlaAspGluValSerAspLysThrAlaArgAsnGlyGlyIleG
 luGluAspGlyValValAlaAlaCysArgAspAlaAlaAlaGluSerAlaGln-125
 128-AlaGlyGlyGlyLeuThrAspGly-135
 160-GlyGlyAsnAspAlaAlaGlyAsn-167
 192-LeuHisArgArgAla-196
 217-AlaAspGlyGlyPheArg-222
 242-GlyValGlyLysSerGlyAla-248
 257-AspValGlyGlyGlyAlaAspGlyVal-265
 284-AspValAsnGlyAsnValGln-290

Hydrophilic Regions - Hopp-Woods

24-ValThrAlaGluGluIleAlaPhe-31
 38-HisGluAlaArgCysGly-43
 51-IleAlaAlaAlaGluArgAlaGlyAsp-59
 77-AlaValAspGlnGluThr-82
 84-LeuAlaValGluArgSerAlaGlyGluCysAlaAspGluValSerAspLysThrAlaArgAsnGlyGlyIleG
 luGluAspGlyValValAlaAlaCysArgAspAlaAlaAlaGluSerAlaGln-125
 162-AsnAspAlaAlaGly-166
 192-LeuHisArgArgAla-196
 258-ValGlyGlyGlyAlaAspGlyVal-265
a519-1

AMPHI Regions - AMPHI

29-ValValGluArgLeuGlyArgPheHisArgAlaLeuThrAlaGly-43
 105-MetAlaIleThrGlnLeuAlaGlnThrThrLeuArgSerVal-118
 139-ValSerAlaLeuAspGluAlaAla-146
 166-GluIleLeuArgSerMetGlnAla-173
 192-LysIleGluGlnIle-196
 221-SerAsnAlaGluLysIleAlaArgIleAsn-230
 249-AlaIleArgGlnIleAlaAlaAla-256
 273-GlnTyrValAlaAlaPheAsnAsnLeuAlaLys-283
 292-AlaAsnValAlaAspIleGlySerLeuIleSerAlaGlyMetLysIleIleAspSerSerLysThrAla-31
 4

Antigenic Index - Jameson-Wolf

31-GluArgLeuGlyArgPheHisArg-38
 58-HisSerLeuLysGluIleProLeuAspValProSerGln-70
 72-CysIleThrArgAspAsnThrGlnLeuThrVal-82
 91-ThrAspProLysLeuAlaSer-97
 122-MetGluLeuAspLysThrPheGluGluArgAspGluIleAsn-135
 141-AlaLeuAspGluAlaAlaGly-147
 154-LeuArgTyrGluIleLysAspLeuValPro-163
 175-IleThrAlaGluArgGluLysArgAlaArgIleAlaGluSerGluGlyArgLysIleGluGln-195
 197-AsnLeuAlaSerGlyGlnArgGluAlaGluIleGlnGlnSerGluGlyGluAlaGlnAla-216
 219-AsnAlaSerAsnAlaGluLysIleAlaArgIleAsnArgAlaLysGlyGluAlaGluSerLeuArgLeu-24
 1
 245-AlaAsnAlaGluAlaIleArg-251
 258-GlnThrGlnGlyGlyAlaAspAlaValAsn-267
 281-LeuAlaLysGluSerAsnThr-287
 303-AlaGlyMetLysIleIleAspSerSerLysThrAlaLys-315

Hydrophilic Regions - Hopp-Woods

31-GluArgLeuGlyArgPheHisArg-38
 58-HisSerLeuLysGluIleProLeu-65
 73-IleThrArgAspAsnThr-78

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91-ThrAspProLysLeu-95
 122-MetGluLeuAspLysThrPheGluGluArgAspGluIleAsn-135
 141-AlaLeuAspGluAlaAla-146
 154-LeuArgTyrGluIleLysAspLeuValPro-163
 175-IleThrAlaGluArgGluLysArgAlaArgIleAlaGluSerGluGlyArgLysIleGluGln-195
 200-SerGlyGlnArgGluAlaGluIleGlnGlnSerGluGlyGluAlaGlnAla-216
 221-SerAsnAlaGluLysIleAlaArgIleAsnArgAlaLysGlyGluAlaGluSerLeuArgLeu-241
 245-AlaAsnAlaGluAlaIleArg-251
 281-LeuAlaLysGluSerAsn-286
 306-LysIleIleAspSerSerLysThrAlaLys-315

a520-1**AMPHI Regions - AMPHI**

104-LeuThrLysAlaAlaAspGlyGlnValCysArgAlaPheSerSerLeu-119

Antigenic Index - Jameson-Wolf

20-LysProSerArgArgAlaLeu-26
 47-AlaSerGlyLysIleSerLeuPro-54
 84-ProProAsnAsnSerThrThrThrSerThrSerSerArgAlaThrSerSerAsnGlySerLeuThrLysAlaAlaAspGlyGlnVal-112
 117-SerSerLeuLysSerHisThrAlaGluIleArgIleSerArgProLysArgArgGluIleSerSerAlaLeuSerArgAsnThrAlaAla-146
 150-ProThrValProLysProLysArgProMet-159
 166-SerProCysLysProThrGluMet-173

Hydrophilic Regions - Hopp-Woods

20-LysProSerArgArgAlaLeu-26
 93-ThrSerSerArgAlaThrSerSer-100
 103-SerLeuThrLysAlaAlaAsp-109
 120-LysSerHisThrAlaGluIleArgIleSerArgProLysArgArgGluIleSer-137
 140-LeuSerArgAsnThrAla-145
 151-ThrValProLysProLysArgProMet-159
 168-CysLysProThrGluMet-173

a521**AMPHI Regions - AMPHI**

86-ValLysThrValSerLysProAlaLys-94
 133-GlnAlaArgLeuAlaLysGlyGlyAsn-141
 147-IleAsnAlaLeuGlnSerValLeuAsp-155

Antigenic Index - Jameson-Wolf

1-MetLysSerLysLeu-5
 36-ValTyrThrThrLysProSerLysSerCysLeuSerThrAspLeuProProIle-53
 55-AsnTyrSerSerGluArgTyrIleProProGlnThrSerGluProThrProSerProSerAsnGlyGlyGln-78
 80-ValLysTyrLysAlaProVal-86
 88-ThrValSerLysProAlaLysSerAsnThrProProProGlnGlnAlaProSerAsnAsnSerArgArgSerIleLeuGluThrGluLeuSerAsnGluArgLysAlaLeuValGluAlaGlnLysMetLeuSer-132
 135-ArgLeuAlaLysGlyGlyAsnIleAsn-143
 153-ValLeuAspArgGlnGlnAsn-159
 163-LeuGlnArgGluLeuGlyArg-169

Hydrophilic Regions - Hopp-Woods

1-MetLysSerLysLeu-5
 40-LysProSerLysSerCysLeu-46
 57-SerSerGluArgTyrIle-62
 65-GlnThrSerGluProThrProSerProSerAsnGly-76

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80-ValLysTyrLysAlaProVal-86
 88-ThrValSerLysProAlaLysSerAsnThrProPro-99
 102-GlnAlaProSerAsnAsnSerArgArgSerIleLeuGluThrGluLeuSerAsnGluArgLysAlaLeuVal
 GluAlaGlnLysMetLeuSer-132
 153-ValLeuAspArgGlnGlnAsn-159
 163-LeuGlnArgGluLeuGlyArg-169

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AMPHI Regions - AMPHI

57-LysIleValGluSerCysValLys-64
 96-MetTrpGluGlnProLeuAspArgLeuSerGluLysGlnIleSerSerPheGlyLysLeuGlyAlaGlnGluG
 lnLeuAspLeuLeuGlyGlyAla-127

Antigenic Index - Jameson-Wolf

1-MetThrGluProLysHisGluMetProThrGluGluGlnValAlaAlaArgLysLysAlaLysAlaLysIleAr
 gThr-26
 48-AlaMetSerLysProGlnAlaLysGlnLysIleValGluSerCysValLys-64
 71-LysTrpGlnAsnAspLeuArgAlaArgGlyLeuAspSerAsnAsnThrArgLeuThr-89
 99-GlnProLeuAspArgLeuSerGluLysGlnIleSerSerPheGlyLysLeuGlyAla-117
 128-AsnAlaPheGluThrArgAspLysGlnCysValAlaAspLeuLysSerGlu-144

Hydrophilic Regions - Hopp-Woods

1-MetThrGluProLysHisGluMetProThrGluGluGlnValAlaAlaArgLysLysAlaLysAlaLysIleAr
 gThr-26
 48-AlaMetSerLysProGlnAlaLysGlnLysIleValGluSerCysVal-63
 72-TrpGlnAsnAspLeuArgAlaArgGlyLeuAspSerAsnAsnThr-86
 100-ProLeuAspArgLeuSerGluLysGlnIle-109
 130-PheGluThrArgAspLysGlnCysValAlaAspLeuLysSerGlu-144

a525-1

AMPHI Regions - AMPHI

59-GluPheAlaGluPheValAsnSerHisProGln-69
 86-LysHisTrpMetLysAsnGly-92
 125-ArgLeuProThrIleAspGluTrpGluPhe-134
 166-AspLeuHisAspValGly-171
 178-TrpGlyValTyrAsp-182
 188-TrpGluTrpThrGlu-192

Antigenic Index - Jameson-Wolf

24-ValGlnIleGluGlyGlySerTyrArgProLeuTyrLeuLysLysAspThrGlyLeuIleLys-44
 46-LysProPheLysLeuAspLysTyrProValThr-56
 67-HisProGlnTrpGlnLysGlyArgIleGlySerLysGlnAlaGlu-81
 88-TrpMetLysAsnGlySerArgSerTyrAlaProLysAlaGlyAspLeuLysGlnPro-106
 122-GlnGlyLysArgLeuProThrIleAspGluTrpGlu-133
 140-AlaThrGlnLysAsnGlySerAsnGluProGlyTyrAsnArgThr-154
 159-TyrAlaAspGlyAspArgLysAspLeuHisAspValGlyLysGlyArgProAsnTyr-177
 190-TrpThrGluAspPheAsnSerSerLeuLeuSerSerGlyAsnAla-204
 213-AlaSerIleGlySerSerAspSerSerAsnTyr-223
 234-SerLeuGlnSerLysTyr-239

Hydrophilic Regions - Hopp-Woods

35-TyrLeuLysLysAspThrGlyLeuIleLys-44
 46-LysProPheLysLeuAspLysTyrPro-54
 71-GlnLysGlyArgIleGlySerLysGlnAlaGlu-81
 91-AsnGlySerArgSerTyrAla-97
 99-LysAlaGlyAspLeuLysGln-105
 122-GlnGlyLysArgLeuProThr-128

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140-AlaThrGlnLysAsnGlySerAsnGluProGlyTyr-151
 160-AlaAspGlyAspArgLysAspLeuHisAspValGlyLysGlyArgPro-175
 216-GlySerSerAspSerSerAsn-222

a527**AMPHI Regions - AMPHI**

7-PhePheGlnProValGln-12
 28-SerAspAlaAlaGluLeuValGluLeuPheAlaLeuPhePro-41
 73-GlyLysGlyIleGluArgGlnValAspAsnIleAlaAspValTyrGlyPhe-89

Antigenic Index - Jameson-Wolf

26-GlyGlySerAspAlaAlaGlu-32
 52-GlnLysProArgLeuGlyCys-58
 71-PheIleGlyLysGlyIleGluArgGlnValAspAsnIleAla-84
 107-LeuLeuArgLysGlyThrGlyLeuGluLysThrCysArgProLysProPheValGlnProHisGlyGlyArg-130

Hydrophilic Regions - Hopp-Woods

27-GlySerAspAlaAlaGlu-32
 52-GlnLysProArgLeuGlyCys-58
 75-GlyIleGluArgGlnValAspAsnIleAla-84
 107-LeuLeuArgLysGlyThrGlyLeuGluLysThrCysArgProLysPro-122

a528**AMPHI Regions - AMPHI**

7-LysTyrThrAlaMetAlaAlaLeuLeuAlaPhe-17
 23-ArgLeuAlaGlyTrpTyrGluCysSerSerLeuSerGlyTrpCysLysProArgLysProAlaAlaIle-45
 69-AsnArgSerValArg-73
 86-TyrArgLysIleGlyLysPhe-92
 106-ProLeuIleGluThrPheLys-112

Antigenic Index - Jameson-Wolf

1-MetGluIleArgAla-5
 29-GluCysSerSerLeuSerGlyTrpCysLysProArgLysProAlaAla-44
 49-AspIleGlyGlyGluSerProProSerLeuGluAspTyrGluIleProLeuSerAspGlyAsnArgSerValArgAlaAsnGluTyrGluSerAlaGlnGlnSer-83
 88-LysIleGlyLysPheGluAlaCysGlyLeuAspTrpArgThrArgAspGlyLysProLeu-107
 110-ThrPheLysGlnGluGlyPheAspCysLeuLysLysGlnGlyLeuArgArgAsnGlyLeuSerGluArgValArgTrp-135

Hydrophilic Regions - Hopp-Woods

1-MetGluIleArgAla-5
 37-CysLysProArgLysProAlaAla-44
 51-GlyGlyGluSerProProSerLeuGluAspTyrGluIleProLeu-65
 67-AspGlyAsnArgSerValArgAlaAsnGluTyrGluSerAlaGln-81
 88-LysIleGlyLysPheGluAlaCys-95
 99-TrpArgThrArgAspGlyLysProLeu-107
 111-PheLysGlnGluGlyPheAspCysLeuLysLysGlnGlyLeuArgArgAsnGlyLeuSerGluArgValArgTrp-135

a529**AMPHI Regions - AMPHI**

11-LeuAlaLeuIleGlyLeuAlaAlaCysSer-20
 35-SerHisArgLeuIle-39
 49-AsnProAspGlnGlyAsnLeuTyrArgLeuProAla-60
 79-GlnGlnProAlaAspAlaGluValLeuLysSerValLysGlyValArg-94
 152-GlnAspSerLeuArgArgLeuPheAsp-160
 162-ValGlyLeuGlyGlyIleTyr-168

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196-AlaMetLysGluVal-200
223-AlaPheLeuThrArgPheMetGlnTyrLeu-232
252-AlaAsnGluMetAla-256
270-GlyArgAsnTrpArg-274

Antigenic Index - Jameson-Wolf

19-CysSerGlySerLysThrGluGlnProLysLeuAspTyrGlnSerArgSerHisArgLeuIleLys-40
42-GluValProProAspLeuAsnAsnProAspGlnGlyAsnLeuTyr-56
60-AlaGlySerGlyAlaValArgAlaSerAspLeuGluLysArgArgThrProAlaVal-78
80-GlnProAlaAspAlaGluValLeuLysSerValLysGlyValArgLeuGluArgAspGlySerGln-101
105-ValValAspGlyLysSerHisAla-112
123-GlnGluAsnGlyPheAspIleLysSerGluGluProAla-135
139-MetGluThrGluTrpAlaGluAsnArgAlaLysIleProGlnAspSerLeuArgArgLeuPhe-159
169-SerThrGlyGluArgAspLysPheIleValArgIleGluGlnGlyLysAsnGlyValSer-188
195-LysAlaMetLysGluValTyrGlyGlyLysAspLysAspThrThr-209
212-GlnProSerProSerAspProAsnLeu-220
233-GlyValAspGlyGlnGlnAlaGluAsnAlaSerAlaLysLysProThrLeu-249
253-AsnGluMetAlaArgIleGluGlyLysSer-262
268-AspTyrGlyArgAsnTrpArgArgThrAlaLeuAla-279
289-GlyGlnAsnThrGluArgHisAla-296
300-GlnLysAlaProAsnGluSerAsnAlaValThrGluGlnLysProGlyLeu-316
320-LeuLeuGlyLysGlyLysAlaGluLysProAlaGluGlnProGlu-334
342-ValAlaAsnGlySerArg-347
350-LeuLeuAsnLysAspGlySerAlaTyrAlaGlyLysAspAlaSer-364
370-LeuHisSerGluLeuArg-375

Hydrophilic Regions - Hopp-Woods

20-SerGlySerLysThrGluGlnProLysLeuAspTyrGlnSerArgSerHisArgLeuIleLys-40
42-GluValProProAspLeuAsnAsnProAspGln-52
63-GlyAlaValArgAlaSerAspLeuGluLysArgArgThrProAla-77
80-GlnProAlaAspAlaGluValLeuLysSerValLysGlyValArgLeuGluArgAspGlySerGln-101
107-AspGlyLysSerHisAla-112
125-AsnGlyPheAspIleLysSerGluGluProAla-135
139-MetGluThrGluTrpAlaGluAsnArgAlaLysIleProGlnAspSerLeuArgArgLeuPhe-159
170-ThrGlyGluArgAspLysPheIleVal-178
180-IleGluGlnGlyLysAsnGlyVal-187
195-LysAlaMetLysGluValTyrGlyGlyLysAspLysAspThrThr-209
214-SerProSerAspProAsnLeu-220
235-AspGlyGlnGlnAlaGluAsnAlaSerAlaLysLysProThr-248
253-AsnGluMetAlaArgIleGluGlyLysSer-262
269-TyrGlyArgAsnTrpArgArg-275
291-AsnThrGluArgHis-295
302-AlaProAsnGluSerAsnAlaValThrGluGlnLysProGlyLeu-316
320-LeuLeuGlyLysGlyLysAlaGluLysProAlaGluGlnProGlu-334
352-AsnLysAspGlySer-356
359-AlaGlyLysAspAlaSer-364
370-LeuHisSerGluLeuArg-375

a531**AMPHI Regions - AMPHI**

59-SerLeuAlaGlyIleLeuAlaAspTyrValAlaGlyIleTrpGlyThr-74
90-GlySerIleIleGlyIlePhePheSerLeuProGlyLeuIleLeuGly-105
108-IleGlyAlaAlaAlaGly-113
131-ThrLeuLeuGlyLeuIleVal-137

Antigenic Index - Jameson-Wolf

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74-ThrLysTyrThrGlyAlaGlyLysLeuAlaVal-84
 114-GluLeuIleGluArgArgAsnMet-121

Hydrophilic Regions - Hopp-Woods

114-GluLeuIleGluArgArgAsnMet-121

a532**AMPHI Regions - AMPHI**

6-GlyLysGlyAlaAsp-10
 27-AlaLeuLeuSerAlaValThrHisLeuLeuAlaIlePheValProMetIleThr-44
 76-TyrLeuGlnValAsnArgPheGlyPro-84
 122-SerThrLeuLeuGly-126
 147-LysValIleThrProThrVal-153
 184-ThrPheGlySerMetGluAsnLeuGly-192
 206-CysMetLysAsnPro-210
 224-GlyTyrIleValAlaLeu-229
 236-PheSerAlaLeuGlnAsnLeuPro-243
 271-LeuSerValPheGluAlaValGlyAspLeuThrAla-282
 297-ThrLysArgLeuArgGlyGlyVal-304
 307-AspGlyLeuValSerValIleAlaThrAlaLeuGly-318
 338-AlaSerArgHisValGlyLysTyr-345
 361-ArgAlaPheThrThrIleProSerProVal-370

Antigenic Index - Jameson-Wolf

1-MetSerGlyGlnLeuGlyLysGlyAlaAspAlaPro-12
 18-LeuGluAspArgProProPheGlyAsn-26
 80-AsnArgPheGlyPro-84
 108-AlaGlyMetLysGluGlyGlyLeuThrLysAspAlaMet-120
 177-PheGlyAlaLysAlaAspGlyThrPheGlySer-187
 207-MetLysAsnProLeuLeuArg-213
 286-ValSerAspGlnProIleGluGlyGluGluTyrThrLysArgLeuArgGlyGlyValLeu-305
 391-ValSerHisGlyIleArgArgArgGluAlaVal-401
 445-LeuProGluAspLysThrGluAlaAlaValLysPheAspThrAspHisLeuGluHis-463

Hydrophilic Regions - Hopp-Woods

4-GlnLeuGlyLysGlyAlaAspAlaPro-12
 18-LeuGluAspArgProProPhe-24
 109-GlyMetLysGluGlyGlyLeuThrLysAspAlaMet-120
 179-AlaLysAlaAspGly-183
 289-GlnProIleGluGlyGluGluTyrThrLysArgLeuArgGly-302
 394-GlyIleArgArgArgGluAlaVal-401
 445-LeuProGluAspLysThrGluAlaAlaValLysPheAspThrAspHisLeuGluHis-463

a537**AMPHI Regions - AMPHI**

38-GlnIleArgAspGlyGlyAspAlaLeuHisTyrLeuAsnArgIle-52
 86-HisGlyGluHisHis-90
 109-GlyTyrLeuTyrAsnGlyValHisGlu-117
 138-ArgGlnValAspGlyLeuMetSerAlaIleTyr-148
 182-ArgPheGluArgHisCys-187
 194-ProGluAlaGlyArgLysTyrTyrArgAsnAla-204
 281-ArgProValArgValLeuThrAlaGly-289
 315-TyrThrAlaValPheAspTyrValArgAsnGlyArgAla-328

Antigenic Index - Jameson-Wolf

21-ThrGlnAsnGlnSerLeuProAlaGly-29
 32-ValTyrProSerAlaProGlnIleArgAspGlyGlyAspAla-45

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69-AsnSerAlaArgArgHisAlaArg-76
 90-LeuAsnProGluAspGlyHisGlyGluHisHisProAspAsnProHis-95
 99-GlnLysLeuThrGluArgThrArgLeu-107
 115-ValHisGluAsnIleSerThrGluGluGluAlaAlaGluSerSerAspSerAspIleArgThrGlnGlnArg
 GlnValAspGlyLeu-143
 152-SerLeuLeuAspArgHisThrAspGluAlaGly-162
 165-PheValArgGluAsnGlyLysThr-172
 178-GlnGlyAsnGlyArgPheGluArgHisCysAlaGlnGlyArgAsnGlnProGluAlaGlyArgLysTyrTyr
 ArgAsnAlaCysHisAsnGly-208
 212-TyrThrAspGluAlaMetPro-218
 237-PheHisGlyGluArgProAspProValProGluTyrGluIleThrGlyAsnProAlaSer-256
 258-AspPheSerGluAlaAlaGly-264
 266-IleThrMetLysSer-270
 274-TyrGlnGlyLysAsnGluIleArgPro-282
 287-ThrAlaGlyAsnAspProAsnGlyArgLeuThr-297
 320-AspTyrValArgAsnGlyArgArgAlaGlnAla-330
 334-PheArgThrArgLysProAspTyrProTyr-343
 345-GluValAsnGlyGlyGluThrLeuAlaValArgLysGlyGluLys-359
 364-TrpArgGlyArgTrpCysLeu-370
 376-TyrThrTyrArgGlnArgProGlySerArgLeuSerIleGlyArgHisLysAlaGlyGly-395
 401-AspGlyMetAlaGlySer-406
 408-IleThrLeuAlaProGluGlyGluThrGluArgGly-419

Hydrophilic Regions - Hopp-Woods

37-ProGlnIleArgAspGlyGlyAsp-44
 69-AsnSerAlaArgArgHisAlaArg-76
 81-AsnProGluAspGlyHisGlyGluHisHisProAsp-92
 100-LysLeuThrGluArgThrArgLeu-107
 119-IleSerThrGluGluGluAlaAlaGluSerSerAspSerAspIleArgThrGlnGlnArgGlnValAsp-141
 152-SerLeuLeuAspArgHisThrAspGluAlaGly-162
 165-PheValArgGluAsnGlyLys-171
 179-GlyAsnGlyArgPheGluArgHisCysAlaGlnGlyArgAsnGlnProGluAlaGlyArgLysTyrTyrArg-202
 238-HisGlyGluArgProAspProValProGlu-247
 258-AspPheSerGluAlaAlaGly-264
 266-IleThrMetLysSer-270
 275-GlnGlyLysAsnGluIleArgPro-282
 289-GlyAsnAspProAsnGlyArg-295
 323-ArgAsnGlyArgArgAlaGlnAla-330
 334-PheArgThrArgLysProAsp-340
 352-LeuAlaValArgLysGlyGluLys-359
 377-ThrTyrArgGlnArgProGlySer-384
 387-SerIleGlyArgHisLysAla-393
 412-ProGluGlyGluThrGluArgGly-419
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AMPHI Regions - AMPHI

42-ThrAlaLeuAlaGluAlaValGluLeuValLysAlaAlaGly-55
 79-LysAlaAlaGluLeuSerGluAlaValAla-88
 105-GlnGluArgAsnLeuGluLysIleLeuGlnCysArgValLeuAspArgVal-121
 145-GlnLeuSerHisLeuAlaGlyArgLeuIleArgGlyTyrGlyHisLeuGln-161
 188-IleAsnAlaLeuLysLysGlnLeuAla-196
 211-SerGlyThrIleLysThrPheAlaLeuValGlyTyrThrAsn-224
 231-PheAsnArgLeuThrLys-236
 271-GlyPheValSerAspLeuProHisLysLeuIleSerAlaPheSerAlaThrLeuGlu-289

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307-AsnSerGlyGlnGlnIleGluAspValGluAsnValLeuGlnGluIleHis-323
 365-GluAsnThrGlyIleAspAlaLeuArgGluAlaIleAlaGluTyrCysAla-381

Antigenic Index - Jameson-Wolf

1-MetThrGlyArgThrGlyArgAsnGlySerThrGlnAlaGlnProGluArgVal-18
 24-MetLeuAspLysAspGlyThrGlySerSerAlaThrArgLeuAsnGly-39
 48-ValGluLeuValLys-52
 54-AlaGlyGlyAspSerValArgValGluThrAlaLysArgAspArgProHisThr-71
 77-ThrGlyLysAlaAlaGluLeuSerGlu-85
 100-GluLeuThrProThrGlnGluArgAsnLeuGluLys-111
 129-AlaArgArgAlaArgThrGlnGluGlyArgLeuGlnVal-141
 161-GlnSerGlnArgGlyGlyIleGlyMetLysGlyProGlyGluThrLysLeuGluThrAspArgArgLeuIle-184
 189-AsnAlaLeuLysLysGlnLeuAlaAsnLeuLysLysGlnArgAlaLeuArgArgLysSerArgGluSerGlyThrIleLysThr-216
 224-AsnValGlyLysSerSerLeu-230
 233-ArgLeuThrLysSerGlyIleTyrAla-241
 257-TyrIleSerProGluCys-262
 287-ThrLeuGluGluThrAlaGln-293
 304-AlaAlaProAsnSerGlyGlnGlnIleGluAspValGluAsnValLeu-319
 323-HisAlaGlyAspIlePro-328
 333-TyrAsnLysThrAspLeuLeuProSerGluGluGlnAsnThrGlyIle-348
 365-GluAsnThrGlyIleAspAlaLeuArgGluAlaIle-376
 381-AlaAlaAlaProAsnThrAspGluThrGluMetPro-392

Hydrophilic Regions - Hopp-Woods

1-MetThrGlyArgThrGlyArgAsnGlySerThr-11
 13-AlaGlnProGluArg-17
 25-LeuAspLysAspGlyThrGly-31
 48-ValGluLeuValLys-52
 54-AlaGlyGlyAspSerValArgValGluThrAlaLysArgAspArgProHis-70
 78-GlyLysAlaAlaGluLeuSerGlu-85
 101-LeuThrProThrGlnGluArgAsnLeuGluLys-111
 129-AlaArgArgAlaArgThrGlnGluGlyArgLeuGlnVal-141
 161-GlnSerGlnArgGlyGlyIle-167
 171-GlyProGlyGluThrLysLeuGluThrAspArgArgLeuIle-184
 189-AsnAlaLeuLysLysGlnLeuAlaAsnLeuLysLysGlnArgAlaLeuArgArgLysSerArgGluSerGlyThr-213
 287-ThrLeuGluGluThrAlaGln-293
 310-GlnGlnIleGluAspValGluAsnValLeu-319
 337-AspLeuLeuProSerGluGluGlnAsn-345
 370-AspAlaLeuArgGluAlaIle-376
 384-ProAsnThrAspGluThrGluMetPro-392
a539-2

AMPHI Regions - AMPHI

18-ArgGlnArgGluHisHisArgLeu-25
 44-LeuValGlyGlyPheAspPheLeuArgValIleGlyCysGlyGlyValAlaTyrLeuProAspPheGlnGln-67

Antigenic Index - Jameson-Wolf

1-MetGluAspLeuGlnGluIleGly-8
 15-LysValGlyArgGlnArgGluHisHisArgLeuHisHisProGlnProGlyAsnGlyGluAlaAspAsp-37
 63-ProAspPheGlnGlnAsnValGlyLysAlaAsp-73
 77-ValProAspAspAlaAlaAla-83
 88-IleGluValAspAlaAspAspAlaValCys-97

-505-

102-LeuPheAspGlnProAspAlaGlyGlyAlaGlyAspAlaAlaGluHis-117

Hydrophilic Regions - Hopp-Woods

1-MetGluAspLeuGlnGluIleGly-8
 15-LysValGlyArgGlnArgGluHisHisArg-24
 31-GlyAsnGlyGluAlaAspAsp-37
 69-ValGlyLysAlaAsp-73
 78-ProAspAspAlaAla-83
 88-IleGluValAspAlaAspAspAlaValCys-97
 102-LeuPheAspGlnProAspAlaGlyGlyAlaGlyAspAlaAlaGluHis-117

a542**AMPHI Regions - AMPHI**

6-ArgIleArgArgCysSerVal-12

Antigenic Index - Jameson-Wolf

1-MetProLysTrpSerArgIleArgArgCysSerVal-12
 20-SerAlaSerArgLeuThrCys-26
 36-MetArgLeuLysSerSerAspGlyIleAlaSer-46
 55-GlyProMetProSerGluThrValSerHisLysSerAspSerSerArgAsnThrSerAlaSerArgArgAsnValSerProLysCysProPhe-85
 89-PheArgGlnAspAlaAlaLysProArgArgPheGlyGlyLys-102
 106-LeuThrGlySerArg-110

Hydrophilic Regions - Hopp-Woods

5-SerArgIleArgArgCysSer-11
 36-MetArgLeuLysSerSerAspGlyIleAla-45
 57-MetProSerGluThrValSerHisLysSerAspSerSerArgAsnThrSerAlaSerArgArgAsnValSerPro-81
 89-PheArgGlnAspAlaAlaLysProArgArgPheGlyGly-101

a544-2**AMPHI Regions - AMPHI**

11-AlaLeuIleGlyIleLeu-16
 55-PheTrpPheProSerCysProGlyCysValSerGluMetProLysIleIleLysThrAla-74
 85-LeuAlaValAlaGlnProIleAspProIleGluSerValArgGlnTyrVal-101
 116-LysAlaValGlyGlnAlaPhe-122

Antigenic Index - Jameson-Wolf

1-MetLysLysIleLeu-5
 22-IleProAspSerLysThrAlaPro-29
 35-AspLeuHisGlyLysThrValSerAsnAlaAspLeuGlnGly-48
 59-SerCysProGlyCys-63
 66-GluMetProLysIleIleLysThrAlaAsnAspTyrLysAsnLysAsnPhe-82
 90-ProIleAspProIleGluSerValArgGlnTyrValLysAspTyrGly-105
 113-AspAlaAspLysAlaVal-118
 133-IleGlyLysLysGlyGluIleLeu-140
 144-ValGlyGluProAspPheGlyLysLeuTyrGlnGluIleAspThr-158

Hydrophilic Regions - Hopp-Woods

1-MetLysLysIleLeu-5
 23-ProAspSerLysThr-27
 66-GluMetProLysIleIleLysThrAlaAsnAspTyrLysAsnLysAsn-81
 92-AspProIleGluSerValArgGlnTyrValLys-102
 113-AspAlaAspLysAlaVal-118
 133-IleGlyLysLysGlyGluIle-139

a547

-506-

AMPHI Regions - AMPHI

7-PheAsnLysThrValAlaSerPheAlaGlnIleValGluThrPheAspVal-23
 62-AsnArgSerPheLys-66
 105-LeuHisIlePheThrAsnIleLys-112

Antigenic Index - Jameson-Wolf

3-ValAspAsnGlyPheAsnLysThrVal-11
 35-GlnMetLysGlnArgCysGlyTrp-42
 53-PheProArgCysGlyPheGluIleProAsnArgSerPheLysGlu-67
 76-LeuSerGluArgPheArgThrAsnAlaGluValGluIle-88

Hydrophilic Regions - Hopp-Woods

36-MetLysGlnArgCys-40
 60-IleProAsnArgSerPheLysGlu-67
 76-LeuSerGluArgPheArgThrAsnAlaGluValGluIle-88
a548

AMPHI Regions - AMPHI

14-ValLeuAlaAlaLeuAlaAlaCysLys-22
 39-SerAlaAlaGluAsnAlaAlaLysPro-47
 89-PheThrHisCysProAspValCysProThr-98
 103-TyrSerAspThrLeuLysGlnLeuGlyGlyGln-113
 132-GluIleIleGlyLysTyrAlaLys-139

Antigenic Index - Jameson-Wolf

21-CysLysProGlnAspAsnSerAlaAla-29
 39-SerAlaAlaGluAsnAlaAlaLysProGlnThrArgGlyThrAspMetArgLysGluAspIleGlyGlyAsp-
 heThrLeuThrAspGlyGluGlyLysProPheAsn-74
 76-SerAspLeuLysGly-80
 91-HisCysProAspValCysPro-97
 104-SerAspThrLeuLysGlnLeuGlyGlyGlnAlaLysAspValLys-118
 124-IleAspProGluArgAspThrProGluIleIleGlyLysTyrAlaLysGlnPheAsnProAspPhe-145
 150-AlaThrGlyAspGlnAsnLeu-156
 169-LysValAsnGlnLysAspAspSerGluAsnTyrLeu-180
 189-LeuIleAspLysAsnGlyGlu-195
 200-SerProTyrGlySerGluProGluThrIleAlaAlaAspVal-213

Hydrophilic Regions - Hopp-Woods

22-LysProGlnAspAsnSerAla-28
 39-SerAlaAlaGluAsnAlaAlaLysProGlnThrArgGlyThrAspMetArgLysGluAspIleGlyGly-61
 64-ThrLeuThrAspGlyGluGlyLysPro-72
 76-SerAspLeuLysGly-80
 111-GlyGlyGlnAlaLysAspValLys-118
 124-IleAspProGluArgAspThrProGluIleIle-134
 151-ThrGlyAspGlnAsn-155
 169-LysValAsnGlnLysAspAspSerGluAsnTyrLeu-180
 191-AspLysAsnGlyGlu-195
 203-GlySerGluProGluThrIleAlaAlaAspVal-213
a552-1

AMPHI Regions - AMPHI

18-CysThrAsnAlaPheAlaAlaPro-25
 29-AlaSerLeuAlaArgTrpLeuAspThr-37
 41-AspArgAspIleGluLysAsnMetIleGluGlyPheAsnAlaGlyPheLysProTyrAlaAspLysAlaLeuA
 laGluMet-67
 75-AlaAlaGluAlaPheAsnArgTyrArgGluAsnVal-86
 89-AspLeuIleThrProGluValLys-96

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116-IleAspGlyMetIleAla-121
 139-IleLysLysSerMetSerGluIle-146
 154-SerGlyLysIleAlaGlnHisHisLeuProGluPheThrGluGluLeuArgArg-171

Antigenic Index - Jameson-Wolf

25-ProProSerAspAlaSerLeu-31
 35-LeuAspThrGlnAsnPheAspArgAspIleGluLysAsnMetIle-49
 53-AsnAlaGlyPheLysProTyrAlaAspLysAlaLeuAlaGluMetProGluAlaLysLysAspGlnAlaAla-76
 78-AlaPheAsnArgTyrArgGluAsnValLeu-87
 90-LeuIleThrProGluValLysGlnAlaVal-99
 105-LysAsnAlaArgGluIleTyrThrGlnGluGluIleAspGly-118
 131-ValValAlaLysAsnProArgLeuIleLysLysSerMetSer-144
 153-LeuSerGlyLysIle-157
 164-GluPheThrGluGluLeuArgArg-171
 173-IleCysGlyGlyLysAsnProAspAlaGlyCysLysGlnAlaGlyGlnValGlyLysArgHisGlnLys-195

Hydrophilic Regions - Hopp-Woods

26-ProSerAspAlaSerLeu-31
 38-GlnAsnPheAspArgAspIleGluLysAsnMetIle-49
 58-ProTyrAlaAspLysAlaLeuAlaGluMetProGluAlaLysLysAspGlnAlaAla-76
 78-AlaPheAsnArgTyrArgGluAsnValLeu-87
 90-LeuIleThrProGluValLysGlnAlaVal-99
 105-LysAsnAlaArgGluIleTyrThr-112
 114-GluGluIleAspGly-118
 131-ValValAlaLysAsnProArgLeuIleLysLysSerMetSer-144
 164-GluPheThrGluGluLeuArgArg-171
 176-GlyLysAsnProAspAlaGlyCysLysGlnAlaGlyGlnValGlyLysArgHisGlnLys-195

a554

AMPHI Regions - AMPHI

38-PheGlnThrProGluThrLeu-44
 71-AlaAlaLeuThrGlnLeuMet-77
 110-ArgMetPheValArgProGlyAspThrVal-119
 124-LeuLeuLysGlyMet-128
 148-SerIleGluAsnPheValGlnGlnMetAsnLysGlu-159
 185-AlaLysAspLeuAlaGlnLeuSerGluAlaLeuMetArgAspPheProGluTyrTyrProLeuPheSer-207
 296-ThrValAlaGlnIle-300
 331-GluGlnIleLeuGluThrIleGlnProIleProAla-342

Antigenic Index - Jameson-Wolf

23-AlaSerProAlaProAsnArgProThrAla-32
 37-ThrPheGlnThrProGluThr-43
 53-LeuGlnSerLysGln-57
 61-AlaLysAsnIleAsnThrProValGlu-69
 84-LysAsnMetLysSerGlyAsnIleArgSerGluGluAsnLeuLysIleProGlu-101
 104-TrpAlaSerGluGlySerArgMetPheValArgProGlyAspThrValSerThrAspLysLeuLeu-125
 143-ArgLeuGlyAsnGlySerIleGluAsnPhe-152
 156-MetAsnLysGluAlaArgArgLeuGlyMetLysAsnThrValPheLysAsnProThrGlyLeuSerArgGluGlyGlnValSerThrAlaLysAspLeuAlaGln-190
 194-AlaLeuMetArgAspPheProGluTyrTyr-203

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214-LysAsnIleGluGlnAsnAsnArgAsnIleLeu-224

226-TyrArgAspAsnAsnValAsnGlyLeuLysAlaGlyHisThrGluSerGlyGlyTyrAsn-245

250-TyrSerGlyAsnGlyArgHis-256

262-LeuGlySerGluSerAlaGluThrArgAlaSerAspAsnSerLys-276

285-PheAspThrProLysIleTyrProLysGlyLysThr-296

302-IleSerGlyGlySerLysLysThrValArg-311

323-ProHisLysGluAlaLysMetAlaGluGlnIleLeu-334

342-AlaProValLysLysGlyGlnIleLeuGlyLysIleLysIleArgGlnAsnGlyTyr-360

362-IleAlaGluLysGluIleValAla-369

371-GluAsnValLysLysArgSerArgTrpGlnArg-381

Hydrophilic Regions - Hopp-Woods

26-AlaProAsnArgProThrAla-32

85-AsnMetLysSerGlyAsnIleArgSerGluGluAsnLeuLysIleProGlu-101

107-GluGlySerArgMetPheValArgProGlyAspThrValSerThrAspLysLeuLeu-125

156-MetAsnLysGluAlaArgArgLeuGlyMet-165

174-ThrGlyLeuSerArgGluGlyGlnValSerThrAlaLysAspLeuAlaGln-190

214-LysAsnIleGluGlnAsnAsnArg-221

227-ArgAspAsnAsnValAsn-232

237-GlyHisThrGluSerGly-242

264-SerGluSerAlaGluThrArgAlaSerAspAsnSerLys-276

289-LysIleTyrProLysGlyLysThr-296

304-GlyGlySerLysLysThrValArg-311

323-ProHisLysGluAlaLysMetAlaGluGlnIleLeu-334

343-ProValLysLysGlyGlnIle-349

353-IleLysIleArgGln-357

362-IleAlaGluLysGluIleValAla-369

371-GluAsnValLysLysArgSerArgTrp-379

a556**AMPHI Regions - AMPHI**

61-IleGluArgLeuLys-65

Antigenic Index - Jameson-Wolf

1-MetAspAsnLysThrLysLeuArgLeu-9

52-ThrSerArgArgGlnGlnArgGlnPheIleGluArgLeuLysLysPheAspIleAspProGluLysGlyArgIleAsnGluAlaAsnLeuArgArgMetTyrHisSerGlyGlyGlnHisGlnLysAspAla-95

102-SerGlnLysCysSerValAspGluAlaHisAlaMetPheLysLysArgProThrArgGlnGluIleAsn-124

127-AlaAlaLysGlnSerArgGlyGlnLysArgProHisArg-139

Hydrophilic Regions - Hopp-Woods

1-MetAspAsnLysThrLysLeuArgLeu-9

53-SerArgArgGlnGlnArgGlnPheIleGluArgLeuLysLysPheAspIleAspProGluLysGlyArgIleAsnGluAlaAsnLeuArgArgMetTyr-85

90-GlnHisGlnLysAspAla-95

105-CysSerValAspGluAlaHisAlaMetPheLysLysArgProThrArgGlnGluIleAsn-124

127-AlaAlaLysGlnSerArgGlyGlnLysArgProHisArg-139

a557**AMPHI Regions - AMPHI**

-509-

22-GlyAlaAspGlyIle-26
 55-SerGlyArgValAspAspAlaAla-62

Antigenic Index - Jameson-Wolf

20-LeuLysGlyAlaAspGlyIleSerProProLeuThrTyrArgSerTrpHisIleGluGlyGlyGlnAlaLeu-43
 54-AlaSerGlyArgValAspAspAlaAlaGly-63
 68-LeuArgIleAspSerValSerGlnAsnLysGluThrTyrThr-81
 100-GlnValLeuLysArgGlyGluProValGlyLysProMet-112
 123-AlaAspAsnGluIleLeuGlyLysGlnGluGluAla-135
 141-MetArgGlnAspAlaAlaGluGlnIleValArg-151

Hydrophilic Regions - Hopp-Woods

21-LysGlyAlaAspGlyIle-26
 56-GlyArgValAspAspAlaAlaGly-63
 68-LeuArgIleAspSerValSerGlnAsnLysGluThrTyrThr-81
 100-GlnValLeuLysArgGlyGluProValGly-109
 126-GluIleLeuGlyLysGlnGluGluAla-135
 141-MetArgGlnAspAlaAlaGluGlnIleValArg-151

a560**AMPHI Regions - AMPHI**

30-PheArgAspGlyAlaHisLysMetAlaArgValTrpValLysIleLeu-45
 167-ArgMetAlaLysMetPhe-172
 192-PheLeuLysTyrProGlyGlu-198
 218-MetGlyLysCysGluHisLeuIleGlu-226

Antigenic Index - Jameson-Wolf

29-ProPheArgAspGlyAlaHisLysMet-37
 61-GlyAlaGluAsnIleProAspArgProAla-70
 76-HisGlnSerGlyTrpGlu-81
 95-ValAlaLysArgGluLeuPhe-101
 116-IleGlyIleAspArgAsnAsnArgArgGluAlaAsnGluGlnLeuIle-131
 134-GlyLeuAlaArgLysAsnGluGlyTyr-142
 148-ProGluGlyThrArgLeuAlaProGlyLysArgGlyLysTyrLysLeuGlyGly-165
 182-AsnSerGlyGluPheTrpProLysAsnSerPheLeuLysTyrProGlyGluIle-199
 209-HisAlaSerGlySerGluAlaGluLeuMetGlyLysCysGluHisLeuIle-225
 242-MetProSerGluThrAla-247

Hydrophilic Regions - Hopp-Woods

29-ProPheArgAspGlyAlaHisLysMet-37
 64-AsnIleProAspArgProAla-70
 95-ValAlaLysArgGluLeuPhe-101
 116-IleGlyIleAspArgAsnAsnArgArgGluAlaAsnGluGlnLeuIle-131
 134-GlyLeuAlaArgLysAsnGlu-140
 149-GluGlyThrArgLeuAlaProGlyLysArgGlyLysTyrLysLeuGlyGly-165
 211-SerGlySerGluAlaGluLeuMetGlyLysCysGluHisLeuIle-225
 242-MetProSerGluThrAla-247

a561**AMPHI Regions - AMPHI**

22-GlyLeuTrpValGlyLeuAlaAla-29
 46-AlaSerValIleGluGluAlaGlyAsn-54
 79-ValAlaGluPheGluLysSerLeuLysArgIleAlaGln-91
 128-SerTyrArgArgProThrGlnVal-135
 172-MetThrLeuValSerSer-177
 188-ValIleArgProLeuGlnAlaLeuArgGluGlyAlaGluArgIleGlyArgArgCysPheAspIle-209

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219-PheLysGlnValGlyArgCysPheAsnGlnMet-229
 238-AspAspLeuGluGlyGlnValAlaGluGlnThrArgSerLeuGluLysGln-254
 265-ThrArgAspLeuHisGlnSer-271
 275-GlnGlnAlaAlaGluHisPhe-281
 283-AsnArgIleLeuPro-287
 317-AlaSerAspLeuGlyLysTyrHisGlu-325
 339-ArgLeuLeuLeuSerPheProAsnGly-347
 358-LeuGlnThrLeuGlyArgGlnLeuGly-366
 392-GlnGlyLeuHisAspSerIleAlaGlnAlaLeuThr-403
 434-GlyValGlnGluCysTyrGluAspValArgGluLeu-445
 456-LysGluPheProGluAlaValAlaAspLeuPheSerArgPheThrGlnGlnThrGly-474
 504-LeuSerAsnIleArgLysHisAla-511
 540-ThrGluAsnIleGlyGluProSer-547

Antigenic Index - Jameson-Wolf

6-ArgPheSerAspGlyIleSer-12
 48-ValIleGluGluAlaGlyAsn-54
 66-AlaGlyGluGlySerProArgAlaGlnIleAspAsnGlnValAlaGluPheGluLysSerLeuLysArgIleAlaGlnSerAspAlaIleHisPro-97
 99-IleProSerAspThrProLeu-105
 124-ProProLeuGlnSerTyrArgArgProThrGlnValAspLeu-137
 152-GluAsnAlaAsnGluLysAsnThr-159
 193-GlnAlaLeuArgGluGlyAlaGluArgIleGlyArgArgCysPheAsp-208
 210-ProValProGluGlyGlyThrProGluPheLysGlnValGlyArgCysPheAsnGlnMetGlyGlyArgLeuLysIleLeuTyrAspAspLeuGluGlyGlnValAlaGluGlnThrArgSerLeuGluLysGlnAsnGlnAsnLeu-258
 263-GlnThrThrArgAspLeuHisGlnSerTyrIle-273
 289-ValGlyAlaAspSerGlyArgValCysLeuAspGlyGlySerAsp-303
 310-HisAlaAspCysGlyThrAlaAlaSerAspLeuGlyLysTyrHisGlu-325
 332-TyrGlnAsnGluThrLeuGly-338
 344-PheProAsnGlyIleSerLeuAspGluAspAspArgIleLeu-357
 360-ThrLeuGlyArgGlnLeu-365
 371-GlyAlaLysGlnGluGluGluLysArgLeu-380
 384-LeuGlnGluArgAsnLeu-389
 394-LeuHisAspSerIle-398
 415-AlaPheAlaGluAsnLysArgGluGluAlaAlaGlu-426
 434-GlyValGlnGluCysTyrGluAspValArgGlu-444
 450-ArgThrLysIleSerAsnLysGluPheProGluAlaVal-462
 468-ArgPheThrGlnGlnThrGlyThrThrVal-477
 480-AlaTrpGluAsnGlyThrHisLeuProThrGlnAspGluGlnLeu-494
 503-SerLeuSerAsnIleArgLysHisAlaHis-512
 519-ArgLeuLeuLysGlnAspGlySerPheThr-528
 531-IleGlnAspAsnGlyGlnGlyPheAspThrGluAsnIleGlyGluProSerGlySerHis-550
 556-MetGlnGluArgAlaLysArgIle-563
 568-GluIleArgSerGlnAlaGlnGlnGlyThrThr-578
 584-AlaSerGluGluSerLeuLys-590

Hydrophilic Regions - Hopp-Woods

48-ValIleGluGluAlaGlyAsn-54
 68-GluGlySerProArgAlaGlnIle-75
 78-GlnValAlaGluPheGluLysSerLeuLysArgIleAlaGln-91
 128-SerTyrArgArgProThrGln-134
 152-GluAsnAlaAsnGluLys-157
 193-GlnAlaLeuArgGluGlyAlaGluArgIleGlyArgArgCysPhe-207
 213-GluGlyGlyThrProGluPheLysGlnValGly-223

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235-IleLeuTyrAspAspLeuGluGlyGlnValAlaGluGlnThrArgSerLeuGluLysGlnAsnGln-256
264-ThrThrArgAspLeuHis-269
290-GlyAlaAspSerGlyArgValCysLeu-298
312-AspCysGlyThrAlaAlaSerAspLeuGlyLysTyrHisGlu-325
349-SerLeuAspGluAspAspArgIleLeu-357
371-GlyAlaLysGlnGluGluGluLysArgLeu-380
384-LeuGlnGluArgAsnLeu-389
415-AlaPheAlaGluAsnLysArgGluGluAlaAlaGlu-426
437-GluCysTyrGluAspValArgGlu-444
451-ThrLysIleSerAsnLysGluPheProGluAlaVal-462
488-ProThrGlnAspGluGlnLeu-494
503-SerLeuSerAsnIleArgLysHisAlaHis-512
519-ArgLeuLeuLysGlnAspGly-525
533-AspAsnGlyGlnGlyPheAspThrGluAsnIleGlyGluProSerGly-548
556-MetGlnGluArgAlaLysArgIle-563
568-GluIleArgSerGlnAlaGln-574
584-AlaSerGluGluSerLeuLys-590
a562

AMPHI Regions - AMPHI

48-TrpSerLeuValSerAlaTrpMetValValIle-58
84-LeuGluThrThrVal-88
90-SerAlaValArgMetLeu-95
97-PheThrProTyrThrThrValAlaSerThrSer-107
116-ThrPhePheAlaProLeuSerArgThrLeu-125
132-AsnAlaProValHisSerMetThrLysSerThrProSerSerPheHis-147
183-ValSerAsnLeuValArgTrpAlaLeu-191

Antigenic Index - Jameson-Wolf

10-AsnSerGlySerThrLysProThr-17
32-ProLeuArgAlaArgArgArgSerLeuTrpArg-42
72-AlaThrGlyGluArgGlnLeuVal-79
105-SerThrSerSerProProGlyAlaGluMet-114
138-MetThrLysSerThrProSerSerPheHisGlySerSerAla-151
154-ArgValXxxLysXxxGlyIle-160
167-ArgLeuProProSerTrpAspThrSerAlaSerLysArgProCysThr-182

Hydrophilic Regions - Hopp-Woods

33-LeuArgAlaArgArgArgSerLeuTrp-41
72-AlaThrGlyGluArgGlnLeuVal-79
110-ProGlyAlaGluMet-114
139-ThrLysSerThrPro-143
175-SerAlaSerLysArgProCysThr-182

a565**AMPHI Regions - AMPHI**

50-AlaThrCysThrArgAlaMetSerLysSer-59
66-SerSerTrpAlaArg-70
84-IleSerThrTrpSerAspLeu-90
103-AspPheMetSerGlnLeuAspLeuThr-111
140-SerHisSerSerGluThrIleSerSerCysProAlaMetAlaSerIleThrLysProAsn-159
184-AlaAsnThrThrSerAlaPhe-190

Antigenic Index - Jameson-Wolf

1-MetAspSerThrLeuSerLysThrCys-9
23-PheAlaArgProArgProAlaAlaSerAsnThrSerLeu-35
37-PheAlaSerProAsnAspThrGlySer-45

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55-AlaMetSerLysSerSerAlaLysTyrGly-64
 67-SerTrpAlaArgThrArgProThrValCysProProLeuProLysProThrIle-84
 99-CysArgSerSerAspPheMetSer-106
 109-AspLeuThrLysArgProThrSerAlaSerLeuProProLysArgLysGlyAlaIle-127
 129-IleAspSerArgThrAlaAla-135
 140-SerHisSerSerGluThrIleSerSerCysProAla-151
 155-IleThrLysProAsnSerProProCysAlaArgTyr-166
 170-LeuArgLeuSerProThrGlu-176
 194-SerIleAlaAsnSerIleAsnThrCysArgGlnProPro-206

Hydrophilic Regions - Hopp-Woods

24-AlaArgProArgProAlaAla-30
 39-SerProAsnAspThrGlySer-45
 55-AlaMetSerLysSerSerAla-61
 69-AlaArgThrArgPro-73
 100-ArgSerSerAspPhe-104
 109-AspLeuThrLysArgProThrSer-116
 119-LeuProProLysArgLysGlyAlaIle-127
 129-IleAspSerArgThr-133
 141-HisSerSerGluThrIleSer-147
 156-ThrLysProAsnSer-160

a566**Antigenic Index - Jameson-Wolf**

35-TyrProAsnCysGlyAlaAspGlyAlaGlyGlyLysGlyHis-48
 61-AlaValGlyGlyGluGluGlyGlyValValAlaAspAspValAlaArgAlaAspGlyGlyLysAlaAspGlyGlyArgIleAlaArg-89
 105-SerAlaGluArgAlaGlyAspAspPheAla-114

Hydrophilic Regions - Hopp-Woods

39-GlyAlaAspGlyAlaGlyGlyLysGlyHis-48
 63-GlyGlyGluGluGlyGlyValValAlaAspAspValAlaArgAlaAspGlyGlyLysAlaAspGlyGlyArgIleAlaArg-89
 105-SerAlaGluArgAlaGlyAspAspPheAla-114

a567**AMPHI Regions - AMPHI**

60-GlyValTyrGlnVal-64
 98-GluLeuValGlnGluIleAlaArgGluVal-107
 112-AlaLeuLysAlaVal-116
 154-TyrAlaLeuGluGlyIleSerAspLeuIleAlaThrValArgLysIleArgGln-171
 180-ThrGlyIleValArg-184
 195-AlaGluValSerGluGlnLeuArgSerHisPheGlyAspLeuLeu-209

Antigenic Index - Jameson-Wolf

10-AsnGlnLysGlyGlyValGlyLysThrThrThr-20
 28-LeuAlaSerArgGlyLysArg-34
 38-ValAspLeuAspProGlnGlyAsnAlaThrThrGlySerGlyIleAspLysAlaSerLeuGlnSerGly-60
 67-GlyAspAlaAspValLysSerAlaAlaValArgSerLysGluGlyGlyTyr-83
 95-AlaGluIleGluLeu-99
 101-GlnGluIleAlaArgGluValArgLeuLysAsnAlaLeu-113
 115-AlaValAlaGluAspTyrAsp-121
 127-CysProProSerLeu-131
 164-AlaThrValArgLysIleArgGlnAlaValAsnProAspLeuAspIle-179
 185-ThrMetTyrAspSerArgSerArgLeuValAlaGluValSerGluGlnLeuArgSerHisPheGlyAspLeu-208
 214-IleProArgAsnIleArgLeuAlaGluAlaProSerHisGly-227

235-AlaGlnAlaLysGlyAlaLys-241
 248-AspGluLeuMetAla-252

Hydrophilic Regions - Hopp-Woods

10-AsnGlnLysGlyGlyValGlyLys-17
 28-LeuAlaSerArgGlyLysArg-34
 40-LeuAspProGlnGly-44
 50-SerGlyIleAspLysAlaSerLeu-57
 67-GlyAspAlaAspValLysSerAlaAlaValArgSerLysGluGlyGly-82
 95-AlaGluIleGluLeu-99
 101-GlnGluIleAlaArgGluValArgLeuLysAsnAlaLeu-113
 115-AlaValAlaGluAspTyrAsp-121
 164-AlaThrValArgLysIleArgGln-171
 175-ProAspLeuAspIle-179
 186-MetTyrAspSerArgSerArgLeuValAlaGluValSerGluGlnLeuArg-202
 216-ArgAsnIleArgLeuAlaGluAlaProSer-225
 235-AlaGlnAlaLysGlyAlaLys-241
 248-AspGluLeuMetAla-252

a568

AMPHI Regions - AMPHI

31-SerIlePheArgArg-35
 48-LysAlaCysLysAsn-52
 70-GluLysAlaAsnThrValArgTyr-77
 81-SerLeuAlaGlnCysPheThr-87
 111-ArgProLeuProSerIleIleThrAla-119
 168-GluPheValGlyPheGlyAsnValPheValGlyGlnPheLeuAsnArgPhePhe-185
 199-GluGluPhePheAspValValVal-206
 227-PheAsnGlnValPheAlaAlaPheLeu-235
 240-HisArgHisAlaAspGlnValAlaAspSerCysArgValGlnSerGln-255

Antigenic Index - Jameson-Wolf

22-IleArgLeuLysArgSerArgLeuProSerIlePhe-33
 38-PheSerCysArgArgArgThrCysPheCysLysAlaCysLysAsnSerProIleArgAsnGluThrSerSerSerGlyArgArgGlnPheSerValGluLysAlaAsnThr-74
 90-SerAsnAlaSerLysProArgLeu-97
 99-ProIleMetArgGlyArgLysArgPhePheAla-109
 140-PheArgGlySerAlaPheLysCysArgLeuAsnAlaGluProCysArg-155
 213-AlaAspGlyAspAla-217
 236-GlyGlnHisGlyHisArgHisAlaAspGlnValAlaAspSerCysArgValGlnSerGln-255

Hydrophilic Regions - Hopp-Woods

22-IleArgLeuLysArgSerArgLeu-29
 40-CysArgArgArgThrCysPhe-46
 48-LysAlaCysLysAsnSerProIleArgAsnGluThrSerSerSerGlyArgArgGlnPheSerValGluLysAlaAsnThr-74
 92-AlaSerLysProArgLeu-97
 101-MetArgGlyArgLysArgPhePheAla-109
 143-SerAlaPheLysCysArgLeuAsnAlaGluProCysArg-155
 238-HisGlyHisArgHisAlaAspGlnValAlaAspSerCysArgVal-252

a569-2

AMPHI Regions - AMPHI

29-AlaAlaPheCysGlyLeuIleAlaLeuThrAlaLeuTrpGluTyrAlaArgMetAlaGlyLeuCysLys-51
 86-PheTrpLeuAlaValMetPro-92
 161-IleAlaArgAlaIleSerProGlyLysSerTrpGluGlyAlaIle-175
 203-ThrValLeuIleGlyLeu-208

210-LeuThrValValSerValCysGlyAspLeuLeuGluSerTrpLeuLys-225

Antigenic Index - Jameson-Wolf

50-CysLysThrGluThrAsnHis-56
 98-LysTrpArgLeuAsnGlyGlyTrp-105
 124-SerLeuArgProHisProAspAspAlaLeu-133
 154-LysAlaLeuGlyLysHisLysIleAlaArg-163
 165-IleSerProGlyLysSerTrpGlu-172
 227-AlaAlaGlyIleLysAspSerSerAsnLeuLeuProGlyHis-240
 242-GlyValPheAspArgThrAspSer-249

Hydrophilic Regions - Hopp-Woods

50-CysLysThrGluThr-54
 127-ProHisProAspAspAlaLeu-133
 155-AlaLeuGlyLysHisLysIleAlaArg-163
 227-AlaAlaGlyIleLysAspSerSerAsn-235
 243-ValPheAspArgThrAspSer-249
a570

AMPHI Regions - AMPHI

6-ArgAlaPheAlaAlaAlaLeuIleGlyLeu-15
 22-HisAlaAspThrPheGlnLysIleGlyPheIleAsn-33
 43-GlnAlaArgLysIleGlnLysThrLeuAspSer-53
 60-AspGluLeuGlnLysLeuGln-66
 81-LeuLysAspAlaLysLys-86
 122-LeuGlnGlnAsnAlaAsnArgValIleValLysIle-133

Antigenic Index - Jameson-Wolf

33-AsnThrGluArgIleTyrLeuGluSerLysGlnAlaArgLysIleGlnLysThrLeuAspSerGluPheSerAlaArgGlnAspGluLeuGlnLysLeuGlnArgGluGlyLeuAspLeuGluArgGlnLeuAlaGluGlyLysLeuLysAspAlaLysLysAlaGlnAlaGluGluLysTrp-93
 100-PheArgLysLysGlnAlaGlnPheGluGluAspTyrAsnLeuArgArgAsnGluGluPheAla-120
 123-GlnGlnAsnAlaAsnArgVal-129
 133-IleAlaLysGlnGluGlyTyrAspValIle-142
 150-AsnThrGlnTyrAspValThrAspSerValIleLysGluMetAsnAlaArg-166

Hydrophilic Regions - Hopp-Woods

37-IleTyrLeuGluSerLysGlnAlaArgLysIleGlnLysThrLeuAspSerGluPheSerAlaArgGlnAspGluLeuGlnLysLeuGlnArgGluGlyLeuAspLeuGluArgGlnLeuAlaGluGlyLysLeuLysAspAlaLysLysAlaGlnAlaGluGluLysTrp-93
 100-PheArgLysLysGlnAlaGlnPheGluGluAspTyrAsnLeuArgArgAsnGluGluPheAla-120
 133-IleAlaLysGlnGluGlyTyr-139
 154-AspValThrAspSerValIleLysGluMetAsnAlaArg-166

a571

AMPHI Regions - AMPHI

6-AlaValAsnValLeu-10
 40-AspGlyAlaArgValPheArgAlaGly-48
 63-AlaAlaValAlaAspPhePheAlaVal-71
 94-ValGluValPheLysGlu-99

Antigenic Index - Jameson-Wolf

13-AlaAlaGlyArgGlyThr-18
 35-LysGlnAlaGlnAlaAspGlyAlaArgValPheArgAlaGlyHisArgGluGluGlnLeuGlyGlyAspVal-58
 77-ArgThrGluArgAlaAla-82
 96-ValPheLysGluGlyAspPhe-102

-515-

110-ArgAsnAlaAspPheAlaAlaGluHisGlnArgGluGlyPheAlaGlyGluGluProGlyLeuValValGly
 -133
 143-GlyGlnGlyAspPheGlyVal-149
 154-ValAlaAlaArgArgPro-159

Hydrophilic Regions - Hopp-Woods

13-AlaAlaGlyArgGly-17
 35-LysGlnAlaGlnAlaAspGlyAlaArgValPheArgAlaGlyHisArgGluGluGlnLeuGly-55
 77-ArgThrGluArgAlaAla-82
 96-ValPheLysGluGlyAspPhe-102
 110-ArgAsnAlaAspPheAlaAlaGluHisGlnArgGluGlyPheAlaGlyGluGluProGly-129
 154-ValAlaAlaArgArgPro-159

a572**AMPHI Regions - AMPHI**

6-GlyAlaValGlyLeuProSerAlaLeuAla-15
 61-GlnValLeuProArgAspTyrThrGlyArg-70
 94-AsnThrPheAspSerIle-99
 126-LysGlyLeuGluLeu-130
 154-IleHisSerMetValArg-159
 183-GlyLeuProGluArgIleAspSerGly-191
 200-LeuSerAlaLeuThr-204
 241-ValAlaAlaPheLeu-245
 251-PheThrAspIleAlaLysThrValAlaHisCysLeuSerGlnAspPheSerAspGlyIleGlyAspIleGly
 Gly-275

Antigenic Index - Jameson-Wolf

18-GlnLysGlyLysThr-22
 26-AlaAsnLysGluThrLeu-31
 41-ThrAlaArgAlaAsnGly-46
 51-ProValAspSerGluHis-56
 63-LeuProArgAspTyrThrGlyArgLeuAsnGluHisGly-75
 94-AsnThrPheAspSerIleThrProAspGlnAlaValLysHisProAsnTrpArgMetGlyArgLysIleSerV
 alAspSer-120
 125-AsnLysGlyLeuGluLeu-130
 138-AsnCysProProAspLysLeuGluVal-146
 158-ValArgTyrArgAspGlySerVal-165
 170-GlyAsnProAspMetArgThr-176
 184-LeuProGluArgIleAspSerGlyValGlyAspLeuAspPhe-197
 204-ThrPheGlnLysProAspPheAspArg-212
 263-SerGlnAspPheSerAspGlyIleGlyAspIleGly-274
 279-GlnAspAlaArgThrArgAlaGlnAla-287

Hydrophilic Regions - Hopp-Woods

27-AsnLysGluThrLeu-31
 41-ThrAlaArgAlaAsnGly-46
 52-ValAspSerGluHis-56
 66-AspTyrThrGlyArgLeuAsnGlu-73
 111-ArgMetGlyArgLysIleSerVal-118
 126-LysGlyLeuGluLeu-130
 140-ProProAspLysLeuGlu-145
 158-ValArgTyrArgAspGlySer-164
 170-GlyAsnProAspMetArgThr-176
 184-LeuProGluArgIleAspSerGlyValGlyAspLeuAspPhe-197
 206-GlnLysProAspPheAspArg-212
 265-AspPheSerAspGlyIleGly-271

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279-GlnAspAlaArgThrArgAlaGlnAla-287

a574**AMPHI Regions - AMPHI**

6-ProAsnSerLeuGluLys-11

47-LeuLysGlnAlaLysSerIleProSerGlyPheTyrLysSerLeuAspAlaLeuValAspArgAsnSerGlyA
rgAlaAlaArgGluLeuAlaGluValValAsp-81

94-GlyLysLeuTyrArgGln-99

110-HisGlnThrLeuLeuAspSerProAspThrThrGly-121

175-GluLysAlaValGluThrAlaArgLeu-183

218-AsnValGlyLysAlaLeuGluAlaAsnLysLysCys-229

246-PheProAlaAlaValGluAlaTyrAlaAlaIleGlu-257

266-MetValGlyGluLysLeuTyrGluAlaTyrAla-276

281-ProGluGluGlyLeuAsnArgLeuThrGlyTyrMetGlnThrPheProGluLeuAspLeu-300

332-AsnGlyValTyrArg-336

357-ArgSerValIleGlyArgGlnLeuGlnArgSer-367

Antigenic Index - Jameson-Wolf

1-MetArgProAsnLeuProAsnSerLeuGluLysAlaAspMetAspAsn-16

45-ThrValLeuLysGlnAlaLysSerIleProSerGlyPheTyrLysSerLeuAspAlaLeuValAspArgAsnS
erGlyArgAlaAlaArgGluLeuAlaGluValValAspGlyArgProGlnSerTyrAsp-88

96-LeuTyrArgGlnArgGlyGluAsnAspLysAlaIle-107

113-LeuLeuAspSerProAspThrThrGlyAlaLysArgAlaArgVal-127

135-TyrGlnSerAlaGlyLeuValAspArgAlaGlu-145

151-LeuGlnAspGlyGluMetAlaArgGluAlaArgGln-162

168-TyrGlnGlnAspArgAspTrpGluLysAlaValGluThr-180

182-ArgLeuLeuSerHisAspAspGlnThrTyr-191

210-SerAsnPheAspAlaAlaArg-216

221-LysAlaLeuGluAlaAsnLysLysCysThrArg-231

238-AspIleGluHisArgGlnGlyAsn-245

277-AlaGlnGlyLysProGluGluGlyLeuAsnArgLeuThrGlyTyr-291

312-LysCysGluLysGluAlaAla-318

323-GluLeuValArgArgLysProAspLeuAsnGly-333

341-LysLeuSerAspLeuAspProAlaTrpLysAlaAspAlaAspMetMetArg-357

368-ValMetTyrArgCysArgAsnCysHisPheLys-378

386-CysProAlaCysAsnLysTrpGlnThrPheThrProAsnLysIleGluVal-402

Hydrophilic Regions - Hopp-Woods

1-MetArgProAsnLeu-5

7-AsnSerLeuGluLysAlaAspMetAspAsn-16

45-ThrValLeuLysGlnAlaLysSerIle-53

62-AspAlaLeuValAspArgAsnSerGlyArgAlaAlaArgGluLeuAlaGluValValAspGlyArgProGlnS
er-86

96-LeuTyrArgGlnArgGlyGluAsnAspLysAlaIle-107

115-AspSerProAspThrThrGlyAlaLysArgAlaArgVal-127

140-LeuValAspArgAlaGlu-145

152-GlnAspGlyGluMetAlaArgGluAlaArgGln-162

169-GlnGlnAspArgAspTrpGluLysAlaValGluThr-180

184-LeuSerHisAspAspGlnThrTyr-191

211-AsnPheAspAlaAlaArg-216

221-LysAlaLeuGluAlaAsnLysLysCysThrArg-231

238-AspIleGluHisArgGlnGlyAsn-245

279-GlyLysProGluGluGlyLeuAsn-286

312-LysCysGluLysGluAlaAla-318

323-GluLeuValArgArgLysProAspLeu-331

341-LysLeuSerAspLeuAspPro-347

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349-TrpLysAlaAspAlaAspMetMetArg-357
 368-ValMetTyrArgCysArgAsnCysHis-376
 398-AsnLysIleGluVal-402

a575**AMPHI Regions - AMPHI**

8-PheArgLysProAlaSer-13
 20-PheAlaGluAlaVal-24
 42-SerThrValSerGlyLeuPheSerAla-50
 114-LeuSerLysSerLysSer-119
 139-SerSerAspSerPro-143
 150-PheThrSerPhePheGly-155
 163-ValSerThrSerAlaLysValIleSerMetPro-173
 217-SerLysValTyrGluProProAsn-224
 233-AlaGluThrCysSerThr-238
 283-AlaGlyPheSerAlaPheAlaSerGlyAla-292
 294-ThrPheAlaSerGlyPheSerThrGly-302
 304-SerThrValAlaCys-308
 311-GlySerAspGlyMetAspAlaValSerAlaLeu-321

Antigenic Index - Jameson-Wolf

2-ValSerGlyGluGluAlaPheArgLysProAlaSerProGluGlyGluAlaGlyPhe-20
 34-GlyArgLeuSerGluLysSerValSer-42
 54-ThrAspSerGlySerGlyVal-60
 96-SerSerSerCysValSerAlaProAspLysMetProPhe-108
 113-ArgLeuSerLysSerLysSerMetArgLeuGluGly-124
 134-PheAlaAspAsnSerSerSerAspSerProSerLysAlaSerVal-148
 155-GlyAlaGlySerGly-159
 173-ProSerSerAlaAlaSerSerArgSerGlySerSerSerGlyThrAspSerSerValArgArgAlaArgLeu
 AspTrpAlaArgArgLysSerSerSerArgAlaIle-208
 211-AlaProProProAlaSer-216
 218-LysValTyrGluProProAsnSerProLeu-227
 230-SerSerSerAlaGluThrCysSerThrGlySerGluThr-242
 261-GlyAlaAspSerAlaAlaVal-267
 276-GlyThrGlySerGlyArgThrAla-283
 299-PheSerThrGlyPhe-303
 309-LeuAspGlySerAspGlyMetAsp-316

Hydrophilic Regions - Hopp-Woods

2-ValSerGlyGluGluAlaPheArgLysProAlaSerProGluGlyGluAlaGlyPhe-20
 34-GlyArgLeuSerGluLysSerValSer-42
 101-SerAlaProAspLysMetPro-107
 113-ArgLeuSerLysSerLysSerMetArgLeuGluGly-124
 137-AsnSerSerSerAspSerProSerLysAla-146
 176-AlaAlaSerSerArgSerGlySerSerSerGlyThrAspSerSerValArgArgAlaArgLeuAspTrpAla
 ArgArgLysSerSerSerArgAlaIle-208
 231-SerSerAlaGluThrCysSerThrGlySerGluThr-242
 310-AspGlySerAspGlyMetAsp-316

a576-1**AMPHI Regions - AMPHI**

31-AlaSerGluProAlaAlaAla-37
 46-SerIleGlySerThr-50
 63-GlyArgSerLeuLysGlnMetLys-70
 82-ThrGluAlaMetGln-86
 102-GlnGluValMetMetLysPheLeuGlnGluGlnGlnAlaLysAlaValGluLysHis-120
 140-AlaLysAspGlyValLysThrThr-147

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202-IleLeuGlyTrpThrGluGlyVal-209

Antigenic Index - Jameson-Wolf

20-AlaCysGlyLysLysGluAlaAlaPro-28
 30-SerAlaSerGluProAlaAla-36
 38-SerSerAlaGlnGlyAspThrSerSerIleGly-48
 61-AspIleGlyArgSerLeuLysGlnMetLysGluGlnGlyAlaGluIleAspLeu-78
 89-TyrAspGlyLysGluIleLysMetThrGluGluGlnAlaGln-102
 109-LeuGlnGluGlnGlnAlaLysAlaValGluLysHisLysAlaAspAlaLysAlaAsnLysGluLysGlyGlu
 AlaPheLeuLysGluAsnAlaAlaLysAspGlyValLysThrThrAlaSerGlyLeu-151
 154-LysIleThrLysGlnGlyGluGlyLysGlnProThrLysAspAspIleVal-170
 173-GluTyrGluGlyArgLeuIleAsp-180
 183-ValPheAspSerSerLysAlaAsnGlyGly-192
 210-GlnLeuLeuLysGluGlyGlyGlu-217
 224-SerAsnLeuAlaTyrArgGluGlnGlyAlaGlyAspLysIleGlyProAsnAla-241
 253-GlyAlaProGluAsnAlaProAlaLysGlnProAla-264
 266-ValAspIleLysLysValAsn-272

Hydrophilic Regions - Hopp-Woods

21-CysGlyLysLysGluAlaAlaPro-28
 30-SerAlaSerGluProAlaAla-36
 40-AlaGlnGlyAspThrSerSer-46
 61-AspIleGlyArgSerLeuLysGlnMetLysGluGlnGlyAlaGluIleAspLeu-78
 89-TyrAspGlyLysGluIleLysMetThrGluGluGlnAlaGln-102
 112-GlnGlnAlaLysAlaValGluLysHisLysAlaAspAlaLysAlaAsnLysGluLysGlyGluAlaPheLeu
 LysGluAsnAlaAlaLysAspGlyValLysThrThrAla-148
 155-IleThrLysGlnGlyGluGlyLysGlnProThrLysAspAspIleVal-170
 173-GluTyrGluGlyArgLeuIleAsp-180
 185-AspSerSerLysAlaAsnGly-191
 210-GlnLeuLeuLysGluGlyGlyGlu-217
 227-AlaTyrArgGluGlnGlyAlaGlyAspLysIleGlyPro-239
 253-GlyAlaProGluAsnAlaProAlaLysGlnProAla-264
 266-ValAspIleLysLysValAsn-272
a577

AMPHI Regions - AMPHI

8-GlyLysIleValGlyAsn-13
 24-AlaAlaSerTyrProLysProCysLysSerPheLysLeuAla-37
 62-ThrValIleLysIleIle-67
 104-AlaPheValValGlyIle-109
 112-GlyMetPheAlaLeuPheGlyArg-119
 144-GluLeuThrAlaProProAlaGln-151

Antigenic Index - Jameson-Wolf

1-MetGluArgAsnGlyVal-6
 14-ArgIleLeuArgMetSerSerGluHisAla-23
 26-SerTyrProLysProCysLysSerPheLys-35
 44-ArgSerCysProGlyGly-49
 88-LeuProGlyGlnLysPheAspLeu-95
 121-LeuSerLeuArgGlyGluAsnGlyArgLeuArgAlaGluValLysLysAsnAlaArgLeuThrGlyLysGlu
 LeuThrAlaProProAlaGlnAsnAlaProGluSerAlaLysGlnPro-160

Hydrophilic Regions - Hopp-Woods

1-MetGluArgAsnGlyVal-6
 14-ArgIleLeuArgMetSerSerGluHisAla-23

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29-LysProCysLysSerPheLys-35
 121-LeuSerLeuArgGlyGluAsnGlyArgLeuArgAlaGluValLysLysAsnAlaArgLeuThrGlyLysGlu
 LeuThr-146

152-AsnAlaProGluSerAlaLysGlnPro-160

a578

AMPHI Regions - AMPHI

10-PheAlaAspPhePheLysAspPheAlaProGlnPheGlyGlyPheGlnAsn-26

34-AspPhePheAlaAlaPheLeuGlyGlyLeuGlu-44

71-AsnThrAspAlaAlaArgPhe-77

Antigenic Index - Jameson-Wolf

2-GlyLysLeuAspIle-6

13-PhePheLysAspPheAlaProGlnPheGlyGly-23

43-LeuGluGlyAspValGlyAsnThrAla-51

71-AsnThrAspAlaAlaArgPheAla-78

88-HisAsnGlnAsnIleGlnThrArgAsnAspPheArgLeuGluArgGlyGlyValGly-106

Hydrophilic Regions - Hopp-Woods

2-GlyLysLeuAspIle-6

43-LeuGluGlyAspValGlyAsn-49

73-AspAlaAlaArgPheAla-78

92-IleGlnThrArgAsnAspPheArgLeuGluArgGlyGlyVal-105

a579

AMPHI Regions - AMPHI

6-PheAspPheLeuHisLeuIleSerAlaSerGlyTrpGluHisLeuAlaGlu-22

49-ValAlaValMetArg-53

66-IleSerPheLeuCysAsn-71

115-LeuSerAsnPheAla-119

129-ProPheLysValGlyAspPheIleArgValGlyGlyPheGluGlyTyrValArgGluIleLys-149

258-GlnValValGluAsnLeuArg-264

Antigenic Index - Jameson-Wolf

110-SerLeuLysAspGlnLeuSer-116

128-ArgProPheLysVal-132

136-IleArgValGlyGlyPheGluGlyTyrValArgGluIleLysMet-150

154-SerLeuArgThrThrAspAsnGluGluValValLeu-165

175-IleValAsnArgSerThrLeu-181

198-LeuLysValAlaLysGluAlaValLeu-206

216-ValGlnAsnGluGluArgGlnAla-223

231-GlyAspAsnAlaIle-235

244-AsnGluAlaAspArgTrpThrLeu-251

253-CysAspLeuAsnGluGlnValValGluAsnLeuArgLysValAsn-267

271-ProPheProGlnArgAspIleHis-278

Hydrophilic Regions - Hopp-Woods

110-SerLeuLysAspGlnLeu-115

144-TyrValArgGluIleLysMet-150

155-LeuArgThrThrAspAsnGluGluValVal-164

198-LeuLysValAlaLysGluAlaValLeu-206

216-ValGlnAsnGluGluArgGlnAla-223

244-AsnGluAlaAspArgTrp-249

254-AspLeuAsnGluGlnValValGluAsnLeuArgLysValAsn-267

273-ProGlnArgAspIleHis-278

a580

AMPHI Regions - AMPHI

-520-

47-ProValSerAlaSerLys-52
 54-SerLeuValLysProLeuSerGlnProLeuAla-64

Antigenic Index - Jameson-Wolf

1-MetAspSerProLysValGlyCysGly-9
 48-ValSerAlaSerLys-52
 66-AlaArgProGluAlaAlaHis-72
 81-ArgProGluAlaLeuAlaAspAsnSerValSerProThrHisAlaThrSerGlyGluVal-100

Hydrophilic Regions - Hopp-Woods

1-MetAspSerProLysVal-6
 66-AlaArgProGluAlaAlaHis-72
 81-ArgProGluAlaLeuAla-86
 96-ThrSerGlyGluVal-100

a581**AMPHI Regions** - AMPHI

43-SerHisPheIleSerLeu-48
 56-ArgGluCysPheValGlyPhe-62
 76-AlaThrAlaPheGlyArgIleAsnGln-84
 91-ValHisGlyPheLeuThrThrPheAla-99

Antigenic Index - Jameson-Wolf

8-GlyGlnThrGlyIleGluGlnAsnThrPheCysArgArgGlyPheThrArgIleAspMetGlyGlyAsnThrAspVal-33
 35-ValGlnAlaAspArgGlyLeuThrSer-43
 49-SerLysLeuGluThrGluValArgGluCysPhe-59
 98-PheAlaGlyArgIleAsnProAlaHisCysGlnSerGlnThrAla-112

Hydrophilic Regions - Hopp-Woods

35-ValGlnAlaAspArgGlyLeu-41
 49-SerLysLeuGluThrGluValArgGlu-57

a582**AMPHI Regions** - AMPHI

27-ThrAspAsnValThrArgLeuAla-34
 65-ValArgSerSerLeu-69
 91-GlyGluThrAlaAspIleTyrThrProLeuSer-101
 139-GlySerProThrArg-143
 169-IleAlaGluAspLeuPhe-174
 246-SerArgSerTrpAsnArgIleTyrAlaMet-255
 263-LeuThrValIleProArgValTrpValArgAlaPheAspGlnSer-277
 286-IleAlaAspTyrMetGlyTyr-292
 334-LeuLysGlyValValArgGlyPheHisGlyTyrGlyGlu-346

Antigenic Index - Jameson-Wolf

26-LeuThrAspAsnValThr-31
 34-AlaCysTyrAspArg-38
 44-LeuProSerSerAlaGlyGlnGluGlyGlnGluSerLysAla-57
 63-GluThrValArgSerSerLeuAspLysGlyGluAla-74
 77-ValValGluLysGlyGlyAspAlaLeuProAlaAspSerAlaGlyGluThrAlaAsp-95
 105-AspLeuAspLysAsnAspLeuArgGly-113
 115-LeuGlyValArgGluHisAsnProMetTyr-124
 131-AsnAsnSerProAsnTyrAlaProGlySerProThrArgGlyThrThrValGlnGluLysPheGlyGlnGlnLysArgAlaGluThrLysLeu-161
 165-PheLysSerLysIleAlaGluAspLeuPheLysThrArgAla-178

-521-

183-GlyTyrThrGlnArgSerAspTrpGlnIleTyrAsnGlnGlyArgLysSerAlaProPheArgAsnThrAsp
TyrLysPro-209
216-ProValLysAlaAspLeuProPheGlyGlyArgLeuArgMet-229
237-GlnSerAsnGlyGlnSerArgProGluSerArgSerTrpAsn-250
273-AlaPheAspGlnSerGlyAspLysAsnAspAsnProAspIleAlaAsp-288
291-GlyTyrGlyAspValLysLeuGlnTyrArgLeuAsnAspArgGlnAsnVal-307
312-ArgTyrAsnProLysThrGlyTyr-319
330-IleLysGlyLysLeuLysGlyValVal-338
342-HisGlyTyrGlyGluSerLeuIleAspTyrAsnHisLysGlnAsnGly-357
365-AsnAspLeuAspGlyIle-370

Hydrophilic Regions - Hopp-Woods

48-AlaGlyGlnGluGlyGlnGluSerLysAla-57
63-GluThrValArgSerSerLeuAspLysGlyGluAla-74
79-GluLysGlyGlyAspAlaLeuPro-86
88-AspSerAlaGlyGluThrAlaAsp-95
105-AspLeuAspLysAsnAspLeuArgGly-113
115-LeuGlyValArgGluHisAsn-121
140-SerProThrArgGlyThrThrValGlnGluLysPheGlyGlnGlnLysArgAlaGluThrLysLeu-161
165-PheLysSerLysIleAlaGluAspLeuPheLysThrArgAla-178
195-GlnGlyArgLysSerAlaProPheArgAsnThrAspTyrLysPro-209
225-GlyArgLeuArgMet-229
239-AsnGlyGlnSerArgProGluSerArgSerTrp-249
274-PheAspGlnSerGlyAspLysAsnAspAsnProAspIleAlaAsp-288
293-GlyAspValLysLeu-297
299-TyrArgLeuAsnAspArgGlnAsn-306
332-GlyLysLeuLysGlyValVal-338
352-AsnHisLysGlnAsn-356

a583**AMPHI Regions - AMPHI**

11-HisLeuAlaPheCysAlaPheCysGlyIle-20
28-ArgLeuHisAsnArgMetTyrAsnAlaAlaAlaAlaArg-40
58-ValThrAspAlaGln-62
66-SerLysAsnGlyAspLysGlnIle-73
75-AspThrHisProGlnPro-80
117-GlyTyrAlaGlyTyrCysAspGln-124
140-AspAsnGlyGlyAsnHisThrAsp-147
162-GlyTyrGlyGlnCysGlnAsnGlnGlyAla-171

Antigenic Index - Jameson-Wolf

24-ThrAlaGlyAsnArgLeuHisAsnArgMetTyr-34
41-GlyIleGlyArgGlyAsnGlySerGlnGlnGlnPheGlyLysSerGluThrValThrAspAlaGlnArgPheS
erSerLysAsnGlyAspLysGlnIleSerAspThrHisProGlnProCysPheGluGlnThrAlaArgAsnHisAs
nCysAspGlyAsnGlnProAsnGlnArgIleGlyGluArgThrGlnArgIleAlaHisArgArgThrArgPheVal
GlyGlyTyrAlaGlyTyrCysAspGlnProAspGlyAsnAsnArgGlnArgThrGlnArgHisGlyLeuAlaAspA
snGlyGlyAsnHisThrAspLysHisGlyGlnGlnArgProSerLeuArgLeuAspProValGlyTyrGlyGlnCy
sGlnAsnGlnGlyAlaGlnTyrCysGlyAsnGlyGluGlyTyrArgPhe-182
190-AspLeuArgLysLysAspArgProGluLysSerGluLys-202

Hydrophilic Regions - Hopp-Woods

27-AsnArgLeuHisAsn-31
41-GlyIleGlyArgGlyAsnGlySer-48
51-GlnPheGlyLysSerGluThrValThrAspAlaGlnArgPheSerSerLysAsnGlyAspLysGlnIleSerA
spThrHisPro-78

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84-GlnThrAlaArgAsnHisAsnCysAspGlyAsnGlnProAsnGlnArgIleGlyGluArgThrGlnArgIleAlaHisArgArgThrArgPhe-114
 123-AspGlnProAspGlyAsnAsnArgGlnArgThrGlnArg-135
 137-GlyLeuAlaAspAsnGlyGlyAsnHisThrAspLysHisGlyGlnGlnArgProSerLeuArgLeuAspPro-160
 178-GluGlyTyrArgPhe-182
 190-AspLeuArgLysLysAspArgProGluLysSerGluLys-202
a584-2
AMPHI Regions - AMPHI
 28-GluPheSerGluSerAlaGlyValGluAlaValGlnAspThrMet-42
 60-AlaGluPheValLysLysPheAsnAsnPheThrArgLys-72
 116-PheAspAlaLeuAsnArgPheIleAlaAspVal-126
 148-IleAspGlnValSerLysAsp-154
 166-LeuAlaGlyValLeuGly-171
 186-GlySerHisIleAla-190
 196-GlnAlaLysMetLeuArgAlaMet-203

Antigenic Index - Jameson-Wolf

50-AlaGluGlyArgAspLysAsnAlaVal-58
 61-GluPheValLysLysPheAsnAsnPheThrArgLysSerLysAsnGlySerPheLysThrGluLeuValSerArgSerAlaMetProArgTyrGlnTyrThrAsnGlyArgArgIleGlnThrGlyTrpGluGluArgAlaGluPheLysValGluGlyArgAsnPheAspAla-118
 138-HisValSerArgGluArgArgAsnGluValIleAspGlnValSerLysAspAlaValLeu-157
 159-PheLysAlaArgAlaGluLysLeuAla-167
 189-IleAlaGlyGlyGly-193
 210-AsnMetGluGlyAlaAspSerAlaAlaProGlyValGluGluIleSer-225

Hydrophilic Regions - Hopp-Woods

50-AlaGluGlyArgAspLysAsnAlaVal-58
 67-AsnAsnPheThrArgLysSerLysAsnGlySerPheLysThrGluLeuValSer-84
 95-AsnGlyArgArgIleGlnThrGlyTrpGluGluArgAlaGluPheLysValGluGlyArgAsnPheAspAla-118
 138-HisValSerArgGluArgArgAsnGluValIleAspGlnValSerLysAspAlaValLeu-157
 159-PheLysAlaArgAlaGluLysLeuAla-167
 210-AsnMetGluGlyAlaAspSerAlaAlaProGlyValGluGluIleSer-225

a585**AMPHI Regions - AMPHI**

6-ArgIlePheAlaThrPheCysAlaValIleValCys-17
 46-ThrThrLeuMetGlySerIleIleSer-54
 65-ArgGluIleLeuThrGluTrpLysAsp-73
 93-HisArgTyrIleAspSer-98
 133-LysAspTrpAspLysLeuGlnAlaArgArg-142
 153-ProLeuAlaProIleTrp-158
 178-LeuAlaGlyAsnIleAlaLysProIleArgIleLeuGlyAsnGlyMetAspArgValAla-197
 223-PheAspLysMetValGluLysLeuGluLysLeuVal-234
 247-GluMetArgSerPro-251
 255-MetGlnAlaIleValGlyLeuIle-262
 273-LeuLysArgLeuGluGly-278
 353-LeuTyrArgAlaPheAspAsnValIleArgAsnAlaValAsn-366
 430-IleIleGluGlnHisCysGlyLysIleIleAlaGlu-441

Antigenic Index - Jameson-Wolf

36-AsnGlnPheAsnGlnArgArgThrIleGlu-45
 56-PheArgAlaArgGlyAspAlaGlyAlaArgGluIleLeuThrGluTrpLysAspSerProValSer-77
 84-GlnGlyAspGluLysLysAspIleLeu-92

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97-AspSerTyrThrIleGluArgAlaArgLeu-106
 120-GluTyrAspArgPheGlyGlu-126
 133-LysAspTrpAspLysLeuGlnAlaArgArgLeuProSerPro-146
 189-LeuGlyAsnGlyMetAspArgValAlaAsnGlyGluLeuGluThrArgIle-205
 207-GlnGlnValAspAspArgAspAspGluLeuSer-217
 225-LysMetValGluLysLeuGluLysLeuValAlaLysGluArgHisLeu-240
 246-HisGluMetArgSerProLeuAla-253
 264-AlaGlnProGlnLysGlnGlnTyrLeuLysArgLeuGluGlyGluLeuThrArgMetAspThrLeuAla-287
 294-SerArgLeuGluThrSerAsnMetAlaLeuGluLysGluSerLeuLys-309
 317-LeuValGluAspAsnGlnSerIleAlaGlnLysAsnGlyGln-330
 335-SerAlaAspGlyLysIleProGluAsnThr-344
 367-TyrSerProGluGlySerThr-373
 377-AsnIleGlyGlnAspHisLysHis-384
 388-AspValThrAspAsnGlyProGlyValAspGluMetGln-400
 409-TyrArgAlaAspSerSerAlaAsnLysProGlyThrGly-421
 432-GluGlnHisCysGlyLysIleIleAlaGluAsnIleLysProAsnGlyLeuArg-449
 453-IleLeuProLysLysLysThrGlySerLysThrGluLysSerAlaAsn-468

Hydrophilic Regions - Hopp-Woods

37-GlnPheAsnGlnArgArgThrIleGlu-45
 56-PheArgAlaArgGlyAspAlaGlyAlaArgGluIleLeuThrGluTrpLysAspSerProVal-76
 84-GlnGlyAspGluLysLysAspIleLeu-92
 100-ThrIleGluArgAlaArgLeu-106
 120-GluTyrAspArgPheGlyGlu-126
 133-LysAspTrpAspLysLeuGlnAlaArgArgLeuPro-144
 192-GlyMetAspArgValAlaAsnGlyGluLeuGluThrArgIle-205
 207-GlnGlnValAspAspArgAspAspGluLeuSer-217
 225-LysMetValGluLysLeuGluLysLeuValAlaLysGluArgHisLeu-240
 246-HisGluMetArgSerProLeu-252
 265-GlnProGlnLysGlnGlnTyrLeuLysArgLeuGluGlyGluLeuThrArgMetAspThrLeuAla-287
 294-SerArgLeuGluThr-298
 302-AlaLeuGluLysGluSerLeuLys-309
 317-LeuValGluAspAsnGlnSerIleAlaGlnLysAsnGlyGln-330
 336-AlaAspGlyLysIleProGlu-342
 389-ValThrAspAsnGlyProGlyValAspGluMetGln-400
 410-ArgAlaAspSerSerAlaAsnLysProGlyThr-420
 438-IleIleAlaGluAsnIleLys-444
 454-LeuProLysLysLysThrGlySerLysThrGluLysSerAlaAsn-468

a586**AMPHI Regions - AMPHI**

12-AspAsnPheLysTyrPheTrpLysThr-20
 30-IleLeuAlaAlaLeuGly-35
 56-ValLeuAlaAsnIleValGluLysAlaGlnAsnLysAlaPro-69
 80-LeuGlnGlnSerTyrProHisSerIleSer-89
 177-SerGlnGluAlaLeuLysAsnTyrGlyGlnAlaLeuGluLysMetProGlnAspSerValGlyArg-198

Antigenic Index - Jameson-Wolf

4-HisLeuGluGluGlnGlnGluLeuAspAsn-13
 43-GlnAsnArgAlaAlaSerGlnAsnGlnGluAla-53
 60-IleValGluLysAlaGlnAsnLysAlaProGlnSerGluIleAsnAlaGluLeuAlaLysLeuGlnGln-82
 100-ThrGluPheAspAlaGlnArgTyrAspValAlaGluGly-112
 118-LeuSerAsnGlnLysAspSerLeu-125
 140-GlnGlnLysLysTyrAspAla-146

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153-ThrProValGluAlaAspPhe-159
 164-MetGluThrLysGlyAspVal-170
 173-AlaGlnGlyLysSerGlnGluAlaLeuLysAsnTyrGlyGlnAlaLeuGluLysMetProGlnAspSerVal
 GlyArgGluLeuVal-201
 204-LysLeuAspSerLeuLys-209

Hydrophilic Regions - Hopp-Woods

4-HisLeuGluGluGlnGlnGluLeuAspAsn-13
 45-ArgAlaAlaSerGlnAsnGlnGluAla-53
 60-IleValGluLysAlaGlnAsnLysAlaProGlnSerGluIleAsnAlaGluLeuAlaLys-79
 100-ThrGluPheAspAlaGlnArgTyrAspValAlaGluGly-112
 120-AsnGlnLysAspSerLeu-125
 140-GlnGlnLysLysTyrAspAla-146
 153-ThrProValGluAlaAspPhe-159
 164-MetGluThrLysGlyAspVal-170
 174-GlnGlyLysSerGlnGluAlaLeuLys-182
 187-AlaLeuGluLysMetProGlnAspSerValGlyArgGluLeuVal-201
 204-LysLeuAspSerLeuLys-209

a587**AMPHI Regions - AMPHI**

6-LeuProAlaLeuProAlaIleLeuProLeuSerAla-17
 232-LysGlnProAspArgLeuAsp-238

Antigenic Index - Jameson-Wolf

27-AspIleMetThrAspLysGlyLysTrpLysLeuGluThr-39
 44-LeuAsnSerGluAsnAsnArgAlaGluLeu-53
 71-ThrGluIleGlnGluAsnGlySerAsnThr-80
 95-GlyAsnThrAspIleTyrGlySerGlySer-104
 108-HisGluGluArgLysLeuAspGlyAsnGlyLysThrArgAsnLysArgMetSerAsp-126
 135-PheLeuLysAspAspLysAsnProAla-143
 151-ThrValTyrGluLysSerArgAsnLysAlaSerSerGlyLysSer-165
 187-TyrArgIleAsnGlySerLysThrLeuSerSerAsnThrLysTyrLysAlaGly-204
 217-AlaAsnAspArgIleSerLeuThrGlyGly-226
 231-GlyLysGlnProAspArgLeuAspGlyLysLysGluSerAlaArgAsnThrSerThr-249
 273-ValSerGlyGlnSerSerSerGluLeuLysPhe-283

Hydrophilic Regions - Hopp-Woods

27-AspIleMetThrAspLysGlyLysTrpLysLeu-37
 47-GluAsnAsnArgAlaGluLeu-53
 72-GluIleGlnGluAsnGlySerAsn-79
 108-HisGluGluArgLysLeuAspGlyAsnGlyLysThrArgAsnLysArgMetSerAsp-126
 135-PheLeuLysAspAspLysAsnPro-142
 151-ThrValTyrGluLysSerArgAsnLysAlaSerSerGly-163
 193-LysThrLeuSerSer-197
 199-ThrLysTyrLysAla-203
 217-AlaAsnAspArgIleSer-222
 232-LysGlnProAspArgLeuAspGlyLysLysGluSerAlaArgAsn-246
 277-SerSerSerGluLeuLysPhe-283

a588**AMPHI Regions - AMPHI**

52-GlnAspGlyArgAsnTyrThrGlySerPhe-61
 99-GlyThrPheLysLys-103

Antigenic Index - Jameson-Wolf

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25-SerTyrGlnGluProGlyCysThrTyrGluGlyAspValGlyLysAspGlyLysProAlaGlyLysGlyThrT
 rpArgCysGlnAspGlyArgAsnTyrThrGlySerPheLysAsnGlyLysPheAspGlyGlnGly-70
 80-IlePheIleGluProPheAsnSerAspSerThrLysPheArg-93
 100-ThrPheLysLysGlyLeuAlaHisGlyArgPheThrValSerGlnAsnGlyGluThr-118
 124-CysGluAsnGlyMetIleLysGluValLysLeuProLysAsnLys-138

Hydrophilic Regions - Hopp-Woods

33-TyrGluGlyAspValGlyLysAspGlyLysProAlaGly-45
 47-GlyThrTrpArgCysGlnAspGlyArgAsnTyr-57
 61-PheLysAsnGlyLysPheAspGly-68
 85-PheAsnSerAspSerThrLysPheArg-93
 100-ThrPheLysLysGlyLeuAla-106
 124-CysGluAsnGlyMetIleLysGluValLysLeuProLysAsnLys-138
a589

AMPHI Regions - AMPHI

18-AlaSerArgIleGluLysValLeu-25
 54-ValAlaAspIleAlaLysIleIleGluLys-63
 103-MetValGlyMetMet-107
 128-LeuAlaSerValValGlnLeuTrp-135
 155-MetAspValLeuValThrIle-161
 198-PheValSerLeuGlyLysPheLeuGluHisArg-208
 230-ValGlnArgAspGlyGlu-235
 245-GlnIleGlyAspLeuIleArg-251
 315-LeuGlyAspMetMetAsnAlaLeuSerGluAlaGln-326
 330-AlaProIleAlaArgValAlaAspLys-338
 349-GlyIleAlaLeuLeuThrPheIleAlaThr-358
 396-MetGlyLysAlaVal-400
 471-IleValSerAlaAlaGln-476
 482-IleProThrAlaGln-486
 502-GlyAlaGlyLeuValLys-507
 539-LysProIleGlyAlaPheAlaLeuAlaAspAlaLeuLys-551
 553-AspThrAlaGluAlaIleGlyArgLeu-561
 603-GluValGlnLysLeuLysAlaAla-610
 617-ValGlyAspGlyIleAsnAspAlaPro-625
 640-AlaAspValAlaGluHisThr-646
 653-GlnHisSerValAsnGlnLeuAlaAspAlaLeuSer-664
 680-AlaPhePheTyrAsnIleLeu-686

Antigenic Index - Jameson-Wolf

1-MetGlnGlnLysValArgPheGlnIleGluGlyMetThr-13
 17-CysAlaSerArgIleGluLysValLeuAsnLysLysAspPheValGluSer-33
 39-AlaSerGluGluAlaGlnValValPheAspAspSerLysThrSerVal-54
 59-LysIleIleGluLysThrGlyTyrGlyAlaLysGluLysThrGluAspThrLeuProGlnProGluAlaGluH
 is-83
 114-ThrArgHisAspTrp-118
 148-IleLysGlyGlyLeu-152
 205-LeuGluHisArgThrLysLysSerSerLeuAsn-215
 228-ValAsnValGlnArgAspGlyGluTrpArg-237
 253-AsnHisGlyGluArgIleAlaAla-260
 262-GlyIleIleGluSerGlySerGlyTrpAlaAspGluSerHisLeuThrGlyGluSerAsnProGluGluLys
 LysAlaGlyGly-289
 298-ThrGluGlySerVal-302
 323-SerGluAlaGlnGlySerLysAlaProIle-332
 334-ArgValAlaAspLysAlaAla-340
 361-IleLysGlyAspTrp-365

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396-MetGlyLysAlaValLys-401
 409-AlaAlaAlaMetGluGluAlaAlaHis-417
 422-ValLeuAspLysThrGlyThrLeuThrGluGlyLysProGlnVal-436
 443-ProAspSerGlyPheAspGluAspAlaLeu-452
 459-ValGluGlnAsnAla-463
 498-AlaGluValLysGlyAlaGlyLeu-505
 507-LysAlaGlyLysAlaGluPheAla-514
 520-LysPheSerAspGlyVal-525
 535-SerValAsnGlyLysProIle-541
 548-AspAlaLeuLysAlaAspThrAlaGluAlaIleGlyArgLeuLysLysHisAsnIle-566
 572-SerGlyAspAsnGlnGlyThrValGluTyrValAla-583
 593-GlyAsnMetSerProArgAspLysAlaAlaGluValGlnLysLeuLysAlaAlaGly-611
 617-ValGlyAspGlyIleAsnAspAla-624
 636-MetLysGlyGlyAlaAspValAlaGlu-644
 668-AlaThrLeuLysAsnIleLys-674
 715-AsnAlaLeuArgLeuLysArgValLysIleAsp-725

Hydrophilic Regions - Hopp-Woods

1-MetGlnGlnLysValArgPheGlnIle-9
 19-SerArgIleGluLysValLeuAsnLysLysAspPheValGlu-32
 39-AlaSerGluGluAlaGlnValValPheAspAspSerLysThrSerVal-54
 64-ThrGlyTyrGlyAlaLysGluLysThrGluAspThrLeuProGlnProGluAlaGluHis-83
 205-LeuGluHisArgThrLysLysSerSerLeu-214
 229-AsnValGlnArgAspGlyGluTrpArg-237
 253-AsnHisGlyGluArgIleAlaAla-260
 262-GlyIleIleGluSer-266
 270-TrpAlaAspGluSerHisLeuThrGlyGluSerAsnProGluGluLysLysAlaGlyGly-289
 323-SerGluAlaGlnGlySerLysAlaProIle-332
 334-ArgValAlaAspLysAlaAla-340
 409-AlaAlaAlaMetGluGluAlaAlaHis-417
 422-ValLeuAspLysThrGlyThr-428
 430-ThrGluGlyLysProGln-435
 445-SerGlyPheAspGluAspAlaLeu-452
 459-ValGluGlnAsnAla-463
 498-AlaGluValLysGly-502
 507-LysAlaGlyLysAlaGluPheAla-514
 548-AspAlaLeuLysAlaAspThrAlaGluAlaIleGlyArgLeuLysLysHisAsnIle-566
 573-GlyAspAsnGlnGly-577
 596-SerProArgAspLysAlaAlaGluValGlnLysLeuLysAlaAlaGly-611
 638-GlyGlyAlaAspValAlaGlu-644
 668-AlaThrLeuLysAsnIleLys-674
 717-LeuArgLeuLysArgValLysIleAsp-725

a590**AMPHI Regions - AMPHI**

77-TyrLeuProAspAsnLeuLysThrValLeuGluGlnProValThrLeuValAsnHisIleThrHis-98
 100-ProPheAlaGlyGlyPhe-105
 123-LysValLeuGluArgPhePhe-129
 132-GlnValProValSerLeu-137
 177-TyrGlnLysGlyPheLysSerTyrArgAsnGly-187
 214-ThrSerAspGlyIleAsnProLeu-221
 248-AsnGluLeuValAsnLeuVal-254
 331-LysArgLysPheAlaArgIle-337
 420-LysMetLeuGluAsp-424
 450-AspIleAsnGluThrLeuArgLeuMet-458
 460-AspSerThrValGln-464

Antigenic Index - Jameson-Wolf

1-MetLysLysProLeu-5
 26-LysAlaGluGluSerLeuThrGlnGlnGlnLysIleLeuGln-39
 48-SerHisGlnTyrGluArgGlyTrpPheThrSerThrGluThrThrValIleArgLeuLysProGluLeu-70
 75-GlnLysTyrLeuProAspAsnLeuLysThrValLeu-86
 113-ThrGluPheLysTyrAlaProGluThrGluLysValLeuGlu-126
 128-PhePheGlyLysGlnVal-133
 144-AsnGlySerGlyLysMetGluVal-151
 157-AspTyrGluGluLeuSerGly-163
 175-ThrValTyrGlnLysGlyPheLysSerTyrArgAsnGlyTyrAspAlaPro-191
 196-LysLeuAlaAspLysGlyAspAlaAlaPheGlu-206
 208-ValHisPheAspSerGluThrSerAspGlyIleAsn-219
 233-PheSerLeuGluTrpLysGluGlyValAspTyr-243
 264-AsnProAsnGlySerIleAlaProSerLysIleGluValGly-277
 281-PheSerThrLysThrGlyGluSerGlyAla-290
 292-IleAspSerGluGlyGlnPheArgPhe-300
 305-TyrGlyAspGluLysTyrGlyPro-312
 330-LeuLysArgLysPheAlaArgIleSerAlaLysLysMetThrGluGluGlnIleArgAsnAspLeu-351
 355-ValLysGlyGluAlaSerGly-361
 366-AsnProValLeuAsp-370
 378-LeuProSerGlyLysIleAspValGlyGly-387
 389-IleMetPheLysAspMetLysLysGluAspLeuAsnGln-401
 406-LeuLysLysThrGluAlaAspIleArgMet-415
 437-AsnAlaGluAspGluAlaGluGlyArgAlaSerLeuAspAspIleAsnGluThrLeu-455
 466-MetAlaArgGluLysTyr-471
 475-AsnGlyAspGlnIleAsp-480
 485-LeuLysAsnAsnGlnLeuLysLeuAsnGlyLysThrLeuGlnAsnGluProGluProAspPheAspGluGly
 GlyMetValSerGluProGlnGln-516

Hydrophilic Regions - Hopp-Woods

1-MetLysLysProLeu-5
 26-LysAlaGluGluSerLeuThrGln-33
 62-ThrValIleArgLeuLysProGluLeu-70
 77-TyrLeuProAspAsnLeuLysThrValLeu-86
 113-ThrGluPheLysTyrAlaProGluThrGluLysValLeuGlu-126
 147-GlyLysMetGluVal-151
 157-AspTyrGluGluLeuSerGly-163
 180-GlyPheLysSerTyrArgAsnGlyTyr-188
 196-LysLeuAlaAspLysGlyAspAlaAlaPheGlu-206
 208-ValHisPheAspSerGluThrSerAspGly-217
 233-PheSerLeuGluTrpLysGluGlyValAspTyr-243
 272-SerLysIleGluValGly-277
 292-IleAspSerGluGlyGlnPhe-298
 306-GlyAspGluLysTyrGlyPro-312
 330-LeuLysArgLysPheAlaArgIleSerAlaLysLysMetThrGluGluGlnIleArgAsnAspLeu-351
 355-ValLysGlyGluAla-359
 381-GlyLysIleAspValGlyGly-387
 389-IleMetPheLysAspMetLysLysGluAspLeuAsn-400
 406-LeuLysLysThrGluAlaAspIleArgMet-415
 437-AsnAlaGluAspGluAlaGluGlyArgAlaSerLeuAspAspIleAsnGluThrLeu-455
 466-MetAlaArgGluLysTyr-471
 486-LysAsnAsnGlnLeuLysLeuAsnGly-494
 496-ThrLeuGlnAsnGluProGluProAspPheAspGluGlyGlyMetValSerGluProGlnGln-516
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AMPHI Regions - AMPHI

6-AlaPheIlePheAla-10
 17-LeuHisGluPheGlyHisTyrIleValAla-26
 61-LeuGlyGlyTyrValLysMetValAsp-69
 143-GlyAspLysIleGlnSerValAsnGlyThrProValAlaAspTrp-157
 181-SerGlyAlaGlnThrValArgThrIleAspAlaAlaGlyThrProGluAlaGlyLysIleAlaLys-202
 218-AlaGlyGlyValGluLys-223
 234-ProGlyAspArgLeu-238
 245-ProIleAlaSerTrpGlnGluTrpAlaAsnLeuThrArg-257
 304-AlaTrpAspAlaGlnIleArg-310
 313-TyrArgProSerValValArgAlaPheGly-322
 324-GlyTrpGluLysThrValSerHis-331
 335-ThrLeuLysPhePheGlyLysLeuIle-343
 351-HisIleSerGlyProLeuThrIleAla-359
 373-TyrLeuGluPheLeuAlaLeu-379

Antigenic Index - Jameson-Wolf

44-PhePheThrArgLysArgGlyAspThrGlu-53
 68-ValAspThrArgGluGlyGluValSerGluAlaAspLeu-80
 84-PheAspLysGlnHisProAlaLysArg-92
 129-ValGluProAspThrIleAla-135
 139-GlyPheGlnSerGlyAspLysIleGlnSer-148
 157-TrpGlySerAlaGln-161
 187-ArgThrIleAspAlaAlaGlyThrProGluAlaGlyLysIleAlaLysAsnGlnGly-205
 219-GlyGlyValGluLysGlySerProAlaGluLysAlaGlyLeuLysProGlyAspArgLeuThrAlaAlaAspGlyLysProIle-246
 254-AsnLeuThrArgGlnSerProGlyLysLysIle-264
 268-TyrGluArgAlaGlyGlnThrHisThrAlaAspIleArgProAspThrValGluGlnProAspHisThrLeu-291
 295-ValGlyLeuArgProGlnProAspArgAlaTrp-305
 307-AlaGlnIleArgArgSerTyrArgProSerVal-317
 327-LysThrValSerHisSer-332
 343-IleSerGlyAsnAla-347
 362-AlaGlyGlnSerAla-366
 408-IleArgGlyLysProLeuGlyGluArgValGln-418

Hydrophilic Regions - Hopp-Woods

44-PhePheThrArgLysArgGlyAspThr-52
 68-ValAspThrArgGluGlyGluValSerGluAlaAspLeu-80
 84-PheAspLysGlnHisProAlaLysArg-92
 129-ValGluProAspThrIleAla-135
 139-GlyPheGlnSerGlyAspLysIleGlnSer-148
 193-GlyThrProGluAlaGlyLysIleAlaLys-202
 220-GlyValGluLysGlySerProAlaGluLysAlaGlyLeuLysProGlyAspArgLeuThrAlaAlaAspGlyLysPro-245
 256-ThrArgGlnSerProGlyLysLysIle-264
 268-TyrGluArgAlaGlyGln-273
 277-AlaAspIleArgProAspThrValGluGlnProAsp-288
 299-ProGlnProAspArgAlaTrp-305
 308-GlnIleArgArgSerTyrArg-314
 362-AlaGlyGlnSerAla-366
 411-LysProLeuGlyGluArgValGln-418

a592**AMPHI Regions - AMPHI**

6-PheGlyGlnIlePheSer-11

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21-GlyGlyLeuLeuGlyGlyLeuIle-28
 50-AlaProAsnAlaAlaAlaAlaAla-57
 65-GlnGlyMetIleGlnMetLeuGlyValPheValAsp-76
 94-ProTyrGlyAspLeu-98
 109-ValSerGlnValGlyGlnTrp-115
 153-ThrAlaValPheArgMet-158
 165-TyrPheGlyAlaValAla-170
 185-IleMetAlaTrpIleAsnLeuValAlaIleLeuLeuLeuSer-198

Antigenic Index - Jameson-Wolf

35-GlyIleLysArgGlyLeuTyrSerAsnGluAlaGlyMetGlySerAlaProAsnAla-53
 57-AlaGluValLysHisProValSer-64
 93-GlnProTyrGlyAspLeuSerGly-100
 137-AlaTyrAlaGluSerAsnVal-143
 206-ArgAspTyrThrAlaLysLeuLysMetGlyLysAspProGluPheLysLeuSerGluHisProGlyLeuLys
 ArgArgIleLysSerAspValTrp-237

Hydrophilic Regions - Hopp-Woods

35-GlyIleLysArgGlyLeuTyr-41
 57-AlaGluValLysHisProVal-63
 212-LeuLysMetGlyLysAspProGluPheLysLeuSerGlu-224
 226-ProGlyLeuLysArgArgIleLysSer-234

a593**AMPHI Regions - AMPHI**

6-GlyLeuCysLysArgPheGlyGlyLysThr-15
 41-SerThrLeuLeuAsnMetIleAlaGlyIleValArg-52
 87-HisMetSerAlaLeuGlu-92
 102-LysMetProLysAla-106
 125-AlaHisArgLysProXxxLysLeuSerGlyGlyGlu-136
 159-PheSerSerLeuAsp-163
 165-HisLeuArgAspArgLeuArgArgMet-173
 213-CysGlyThrProGluThrLeuValGlnThrProAlaGlyValGlnValAlaHisLeuMetGly-233

Antigenic Index - Jameson-Wolf

6-GlyLeuCysLysArgPheGlyGlyLysThrValAlaAsp-18
 24-ValGlyArgGlyLysIle-29
 33-LeuGlyArgSerGlyCysGlyLysSerThr-42
 50-IleValArgProAspGlyGlyGlu-57
 61-AsnGlyGluAsnIleThrArgMetProProGluLysArgArgIle-75
 99-LysMetGlnLysMetProLysAlaGluAlaGluSer-110
 119-ValGlyLeuGluAsnGluAlaHisArgLysProXxxLysLeuSerGlyGlyGluLysGlnArgLeuAlaLeu
 -142
 157-GluSerPheSerSerLeu-162
 164-ThrHisLeuArgAspArgLeuArgArgMetThrAlaGluArgIleArgLysGlyGlyIle-183
 190-HisSerProGluGluAlaCysThrAlaAlaAspGluIleAlaVal-204
 206-HisGluGlyLysIleLeuGlnCysGlyThrProGluThrLeu-219
 233-GlyLeuProAsnThrAspAspArgHisIle-243
 248-ValArgPheAspGlnAspGlyMetGluCysArgValLeuSer-261
 263-ThrCysLeuProGluSer-268
 291-GlyGluIleSerGlyAsnAspThrValArgIleHisIleGluAspArgGluIleValArgPheArg-312

Hydrophilic Regions - Hopp-Woods

6-GlyLeuCysLysArgPheGlyGly-13
 25-GlyArgGlyLysIle-29
 36-SerGlyCysGlyLys-40

-530-

51-ValArgProAspGlyGly-56
 68-MetProProGluLysArgArgIle-75
 99-LysMetGlnLysMetProLysAlaGluAlaGluSer-110
 119-ValGlyLeuGluAsnGluAlaHisArgLysProXxxLysLeuSerGlyGlyGluLysGlnArgLeuAlaLeu-142
 164-ThrHisLeuArgAspArgLeuArgMetThrAlaGluArgIleArgLysGlyGly-182
 191-SerProGluGluAlaCysThrAlaAlaAspGluIleAlaVal-204
 206-HisGluGlyLysIle-210
 236-AsnThrAspAspAspArgHisIle-243
 248-ValArgPheAspGlnAspGlyMetGluCysArgValLeuSer-261
 291-GlyGluIleSerGly-295
 297-AspThrValArgIleHisIleGluAspArgGluIleValArgPheArg-312
a594

AMPHI Regions - AMPHI

21-SerIleLeuArgLeu-25
 108-AlaGlyArgGluCysGlnGluThrAlaAlaAla-118
 138-AlaIleLysArgCysAsn-143

Antigenic Index - Jameson-Wolf

1-MetGlyAlaAspThrAspGlyAspLysAspValArgLeuAsnArgThr-16
 51-ValGluHisProAsnArgPhe-57
 75-HisLeuAspGlySerThrGlyGly-82
 86-PheArgArgGluLysThrGlyHisLysArgArgCysHisThrGlnCys-101
 103-HisSerAlaArgAlaAlaGlyArgGluCysGlnGluThr-115
 137-ArgAlaIleLysArgCysAsn-143

Hydrophilic Regions - Hopp-Woods

1-MetGlyAlaAspThrAspGlyAspLysAspValArgLeuAsnArg-15
 86-PheArgArgGluLysThrGlyHisLysArgArgCysHis-98
 105-AlaArgAlaAlaGlyArgGluCysGlnGluThr-115
 137-ArgAlaIleLysArgCysAsn-143

a595**AMPHI Regions - AMPHI**

20-CysGlnProProGluAla-25
 140-AlaAspLeuGluLysLeuSerGlnProLeuAla-150
 157-GlnGlyGluValLysGluLeuVal-164
 169-ThrPheThrGluAlaValLysAlaGlyAspIleGluLysAla-182
 196-IleGluProIleAlaGluLeuPheSerGluLeuAspPro-208
 224-AlaGlyPheThrGlyPheHisArg-231
 243-SerGlyValLysGluIleAlaAlaLysLeuMetThrAspValGluAlaLeuGlnLysGluIleAsp-264
 274-ValGlyGlyAlaSerGluLeuIleGluGluValAlaGly-286
 309-AspGlySerLysLysIleValAspLeuPheArgProLeu-321
 337-PheLysGlnValAsnGluIleLeuAlaLys-346
 351-AspGlyPheGluThrTyrAspLysLeuGlyGlu-361
 366-AlaLeuGlnAlaSerIleAsnAlaLeuAlaGluAspLeuAlaGlnLeuArgGlyIleLeuGlyLeu-387

Antigenic Index - Jameson-Wolf

1-MetArgLysPheAsn-5
 21-GlnProProGluAlaGluLysAlaAlaPro-30
 32-AlaSerGlyGluAlaGlnThrAlaAsnGluGlyGlySer-44
 50-AsnAspAsnAlaCysGluProMetGlu-58
 70-IleLysAsnAsnSerGlyArgLysLeuGluTrpGluIle-82
 87-MetValValAspGluArgGluAsnIleAla-96
 98-GlyLeuSerAspLysMetThr-104
 108-LeuProGlyGluTyrGluMet-114

-531-

120-ThrAsnProArgGlyLysLeuValValThrAspSerGlyPheLysAspThrAlaAsnGluAlaAspLeuGlu
LysLeuSer-146
158-GlyGluValLysGluLeuValAlaLysThrLysThrPheThrGluAlaValLysAlaGlyAspIleGluLys
AlaLysSerLeuPheAla-187
189-ThrArgValHisTyrGluArgIleGluProIle-199
204-SerGluLeuAspProValIleAspAlaArgGluAspAspPheLysAspGlyAlaLysAspAlaGly-225
238-ValGluLysAspValSerGlyValLysGluIleAlaAla-250
252-LeuMetThrAspValGluAlaLeuGlnLysGluIleAsp-264
269-ProProGlyLysValValGlyGlyAla-277
279-GluLeuIleGluGluValAlaGlySerLysIleSerGlyGluGluAspArgTyrSerHisThrAspLeuSer
AspPheGlnAlaAsnValAspGlySerLysLysIleValAsp-316
322-IleGluThrLysAsnLysAlaLeuLeuGluLysThrAspThrAsnPheLysGlnValAsn-341
345-AlaLysTyrArgThrLysAspGlyPheGluThrTyrAspLysLeuGlyGluAlaAspArgLysAlaLeu-36
7
374-LeuAlaGluAspLeuAlaGln-380

Hydrophilic Regions - Hopp-Woods

1-MetArgLysPheAsn-5
21-GlnProProGluAlaGluLysAlaAlaPro-30
32-AlaSerGlyGluAlaGlnThrAlaAsnGluGlyGlySer-44
52-AsnAlaCysGluProMetGlu-58
72-AsnAsnSerGlyArgLysLeuGluTrpGluIle-82
87-MetValValAspGluArgGluAsnIle-95
99-LeuSerAspLysMetThr-104
110-GlyGluTyrGluMet-114
122-ProArgGlyLysLeuValVal-128
131-SerGlyPheLysAspThrAlaAsnGluAlaAspLeuGluLysLeuSer-146
158-GlyGluValLysGluLeuValAlaLysThrLysThrPheThrGluAlaValLysAlaGlyAspIleGluLys
AlaLysSerLeuPheAla-187
189-ThrArgValHisTyrGluArgIleGluProIle-199
204-SerGluLeuAspProValIleAspAlaArgGluAspAspPheLysAspGlyAlaLysAspAlaGly-225
238-ValGluLysAspValSerGlyValLysGluIleAlaAla-250
252-LeuMetThrAspValGluAlaLeuGlnLysGluIleAsp-264
279-GluLeuIleGluGluValAlaGly-286
288-LysIleSerGlyGluGluAspArgTyrSerHis-298
308-ValAspGlySerLysLysIleValAsp-316
322-IleGluThrLysAsnLysAlaLeuLeuGluLysThrAspThrAsnPhe-337
347-TyrArgThrLysAspGlyPheGluThrTyrAspLysLeuGlyGluAlaAspArgLysAlaLeu-367
374-LeuAlaGluAspLeuAlaGln-380
a596

AMPHI Regions - AMPHI

9-MetLeuArgValSerLysValVal-16
50-LeuArgIleMetAlaGlyValAspLys-58
87-ValArgGluGluValGluSerGlyLeuGlyGluValAlaAlaGlnLysArgLeuGluGluValTyrAlaG
luTyr-112
192-ProThrAsnHisLeuAsp-197
202-GluTrpLeuGluGlnPheLeuValArgPheProGly-213
295-AlaArgPheGluGluMetSerAsnTyr-303
322-LeuGlyAsnGluValIleGluPheValAsnValSerLysSerPhe-336
366-SerThrLeuPheLysMet-371
409-AspAsnIleAlaGlu-413
444-IleThrGlyGlnLeuSer-449
483-LeuArgAlaLeuGluAspAlaLeuLeuGluPheAla-494

Antigenic Index - Jameson-Wolf

-532-

16-ValProProGlnLysThrIleIleLysAspIleSer-27
 41-LeuAsnGlyAlaGlyLysSerThrVal-49
 54-AlaGlyValAspLysGluPheGluGlyGluAla-64
 75-LeuProGlnGluProGluLeuAspProGluLysThrValArgGluGluValGluSerGlyLeu-95
 99-AlaAlaAlaGlnLysArgLeuGluGluValTyr-109
 112-TyrAlaAsnProAspAlaAspPheAspAlaLeuAlaGluGluGlnGlyArgLeuGlu-130
 136-GlySerSerThrGlyGlyGlyAlaGluHisGluLeuGluIleAlaAlaAspAlaLeuArg-155
 157-ProGluTrpAspAlaLysIleAspAsnLeuSerGlyGlyGluLysArgArgValAla-175
 181-LeuSerLysProAspMet-186
 190-AspGluProThrAsnHisLeuAspAlaGluSer-200
 219-ThrHisAspArgTyrPhe-224
 233-LeuGluLeuAspArgGlyHisGlyIleProTrpLysGlyAsnTyrSerSer-249
 251-LeuGluGlnLysGluLysArgLeuGluAsnGluAlaLysSerGluAlaAlaArgValLysAlaMetLysGln
 GluLeuGluTrp-278
 280-ArgGlnAsnAlaLysGlyArgGlnAlaLysSerLysAlaArgLeuAlaArgPheGluGluMetSerAsnTyr
 GluTyrGlnLysArgAsnGluThrGlnGlu-313
 319-AlaGluArgLeuGlyAsnGluVal-326
 333-SerLysSerPheGlyAsp-338
 359-GlyProAsnGlyAlaGlyLysSerThrLeu-368
 373-AlaGlyLysGluGlnProAspSerGlyGluValLysIle-385
 395-AspGlnSerArgGluGlyLeuGlnAsnAspLysThrValPhe-408
 411-IleAlaGluGlyArgAspIleLeu-418
 421-GlyGlnPheGluIleProAlaArgGlnTyrLeuGlyArgPheAsnPheLysGlySerAspGlnSerLysIle
 -444
 446-GlyGlnLeuSerGlyGlyGluArgGlyArgLeuHisLeu-458
 462-LeuLeuGlyGlyGlyAsn-467
 471-LeuAspGluProSerAsnAspLeuAspValGluThr-482
 501-SerHisAspArgTrpPhe-506
 516-AlaCysGluGlyAspSerLysTrp-523
 526-PheAspGlyAsnTyrGlnGluTyrGluAlaAspLysLysArgArgLeuGlyGluGluGlyThrLysProLys
 ArgIleLysTyrLysProValThrArg-558

Hydrophilic Regions - Hopp-Woods

54-AlaGlyValAspLysGluPheGluGlyGluAla-64
 77-GlnGluProGluLeuAspProGluLysThrValArgGluGluValGluSerGlyLeu-95
 99-AlaAlaAlaGlnLysArgLeuGluGluValTyr-109
 113-AlaAsnProAspAlaAspPheAspAlaLeuAlaGluGluGlnGlyArgLeuGlu-130
 141-GlyGlyAlaGluHisGluLeuGluIleAlaAlaAspAlaLeuArg-155
 157-ProGluTrpAspAlaLysIleAspAsn-165
 167-SerGlyGlyGluLysArgArgValAla-175
 181-LeuSerLysProAsp-185
 190-AspGluProThrAsnHisLeuAspAlaGluSer-200
 233-LeuGluLeuAspArgGlyHis-239
 251-LeuGluGlnLysGluLysArgLeuGluAsnGluAlaLysSerGluAlaAlaArgValLysAlaMetLysGln
 GluLeuGluTrp-278
 280-ArgGlnAsnAlaLysGlyArgGlnAlaLysSerLysAlaArgLeuAlaArgPheGluGluMetSerAsn-30
 2
 304-GluTyrGlnLysArgAsnGluThrGln-312
 319-AlaGluArgLeuGlyAsnGluVal-326
 373-AlaGlyLysGluGlnProAspSerGlyGluValLysIle-385
 395-AspGlnSerArgGluGlyLeuGlnAsnAspLysThrValPhe-408
 411-IleAlaGluGlyArgAspIleLeu-418
 435-AsnPheLysGlySerAspGlnSerLysIle-444
 449-SerGlyGlyGluArgGlyArgLeuHisLeu-458
 472-AspGluProSerAsnAspLeuAspValGluThr-482

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517-CysGluGlyAspSer-521
 529-AsnTyrGlnGluTyrGluAlaAspLysLysArgArgLeuGlyGluGluGlyThrLysProLysArgIleLys
 Tyr-553

a597

AMPHI Regions - AMPHI

6-SerAsnSerLeuLysGlnLeuGlnGlu-14
 45-TrpAspLysPheGlnLysLeu-51
 68-GlnIleSerArgPheValSerGly-75
 101-LeuArgTyrThrArgTyrValAsnAla-109
 111-AsnArgGluValValLysAspLeuGluLysGlnGln-122
 132-IleAsnAsnGluLeuAlaArgLeuLysLys-141
 144-AlaAsnValGlnSerLeu-149
 157-AspAlaAlaGluGlnThrGlu-163
 169-AlaLysIleAlaLysAspAlaArg-176
 189-AsnLysLeuLeuSer-193
 253-ProSerValMetGlyIleGlySerAlaAspGlyPheSerArgMetGlnGlyArgLeuLysLysProValAsp
 GlyValProThrGly-281
 302-ProAlThrValGluSerIleAla-309
 314-SerTyrAlaAspGluLeuAspGlyTyrGlyLys-324
 336-SerIleTyrAlaGlyLeu-341

Antigenic Index - Jameson-Wolf

7-AsnSerLeuLysGlnLeuGlnGluGluArgIleArgGlnGluArgIleArgGlnAlaArg
 gGlyAsnLeu-34
 36-SerValAsnArgLysGlnArgGluAlaTrpAspLysPheGlnLysLeuAsnThrGluLeuAsnArgLeuLysT
 hrGluValAlaAla-64
 74-SerGlyAsnTyrLysAsnSerGlnProAsn-83
 91-AsnAlaGluProGlyGlnLysAsnArgPhe-100
 107-ValAsnAlaSerAsnArgGluValValLysAspLeuGluLysGlnGlnLys-123
 128-GlnGluGlnLysIleAsnAsnGluLeuAlaArgLeuLysLysIleGln-143
 149-LeuLeuLysLysGlnGlyValThrAspAlaAlaGluGlnThrGluSerArgArgGlnAsnAlaLysIleAla
 LysAspAlaArgLysLeuLeuGluGlnLysGlyAsnGluGlnGlnLeu-188
 191-LeuLeuSerAsnLeuGluLysLysLysAlaGluHisArgIleGlnAspAlaGluAlaLysArgLysLeuAla
 GluAlaArgLeuAlaAlaAlaGluLysAlaArgLysGluAlaAlaGlnGlnLysAlaGluAlaArgArgAlaGluM
 etSerAsnLeuThrAlaGluAspArgAsnIleGlnAlaProSer-254
 259-GlySerAlaAspGlyPheSerArgMetGlnGlyArgLeuLysLysProValAspGlyValProThr-280
 284-GlyGlnAsnArgSerGlyGlyAspVal-292
 314-SerTyrAlaAspGluLeuAspGlyTyrGly-323
 329-AspHisGlyGluAsnTyr-334
 345-SerValGlyLysGlyTyr-350
 354-AlaGlySerLysIleGlySerSerGlySerLeuProAspGlyGluGluGlyLeu-371
 381-ValLeuAsnProSerSerTrp-387

Hydrophilic Regions - Hopp-Woods

7-AsnSerLeuLysGlnLeuGlnGluGluArgIleArgGlnGluArgIleArgGlnAlaArg
 gGlyAsn-33
 37-ValAsnArgLysGlnArgGluAlaTrpAspLysPheGlnLysLeuAsnThrGluLeuAsnArgLeuLysThrG
 luValAlaAla-64
 77-TyrLysAsnSerGln-81
 91-AsnAlaGluProGlyGlnLysAsnArgPhe-100
 110-SerAsnArgGluValValLysAspLeuGluLysGlnGlnLys-123
 128-GlnGluGlnLysIleAsnAsnGluLeuAlaArgLeuLysLysIleGln-143
 149-LeuLeuLysLysGlnGlyValThrAspAlaAlaGluGlnThrGluSerArgArgGlnAsnAlaLysIleAla
 LysAspAlaArgLysLeuLeuGluGlnLysGlyAsnGluGlnGlnLeu-188

-534-

193-SerAsnLeuGluLysLysLysAlaGluHisArgIleGlnAspAlaGluAlaLysArgLysLeuAlaGluAla
 ArgLeuAlaAlaAlaGluLysAlaArgLysGluAlaAlaGlnGlnLysAlaGluAlaArgArgAlaGluMet-240
 244-ThrAlaGluAspArgAsnIleGln-251
 267-MetGlnGlyArgLeuLysLysProValAsp-276
 286-AsnArgSerGlyGlyAspVal-292
 315-TyrAlaAspGluLeuAspGlyTyrGly-323
 356-SerLysIleGlySer-360
 363-SerLeuProAspGlyGluGluGlyLeu-371
a601

AMPHI Regions - AMPHI

7-LeuValAspGluIleAspValProAsnIleGlyArg-18
 26-AlaGlyIleProThrValPhe-32
 42-GlyLysGluLeuGlnAspAspIleAsnAsnAspAlaAlaAlaLeuGluLysPheGluLysIleArgAlaTyrG
 lyAlaLeu-68
 70-MetGlyLeuIleSerAspValSerGluAlaAla-80
 100-SerSerGlyLysThrValAsn-106
 137-AlaAlaAlaValProGlyThrLeuValAsnLeuAlaAla-149
 169-GlyAlaAlaAlaGlu-173

Antigenic Index - Jameson-Wolf

3-ProThrGlyAsnLeuValAspGluIleAspValProAsnIleGlyArgLeuLys-20
 39-GlyTyrThrGlyLysGluLeuGlnAspAspIleAsnAsnAspAlaAlaAlaLeuGluLysPheGluLysIleA
 rgAla-64
 75-AspValSerGluAlaAlaAlaArgAlaHisThrPro-86
 97-TyrThrAlaSerSerGlyLysThrValAsn-106
 149-AlaGlyGlyGlyThrArgLysGluValArgPheGlyHisProSerGlyThrLeuArg-167
 172-AlaGluCysGlnAspGlyGln-178
 185-ValMetSerArgSerAlaArgValMet-193
 198-ValArgValProGluAspCysPhe-205

Hydrophilic Regions - Hopp-Woods

7-LeuValAspGluIleAspVal-13
 40-TyrThrGlyLysGluLeuGlnAspAspIleAsnAsnAspAlaAlaAlaLeuGluLysPheGluLysIleArgA
 la-64
 75-AspValSerGluAlaAlaAlaArgAlaHisThr-85
 99-AlaSerSerGlyLysThrValAsn-106
 151-GlyGlyThrArgLysGluValArgPhe-159
 172-AlaGluCysGlnAsp-176
 188-ArgSerAlaArgValMet-193
 200-ValProGluAspCysPhe-205
a602

AMPHI Regions - AMPHI

7-AspLysAlaArgHis-11
 21-ValAsnArgHisGlyGln-26
 54-ArgGlnIleAlaGlnIle-59
 61-AlaGlyLeuHisValCysAsnSerVal-69
 78-HisValIleValGluMetCysAlaTrpTyr-87

Antigenic Index - Jameson-Wolf

5-GlnCysAspLysAlaArgHisMetArg-13
 20-GlnValAsnArgHisGlyGlnThrGlyAsnCysGly-31
 36-CysSerLeuGlnGlyAsnArgLysAlaGlnValPheAspThrAspLeuIleAspArgGlnIle-56
 90-SerThrGlyGluTyr-94

99-GlnMetArgAspTyrIle-104

Hydrophilic Regions - Hopp-Woods

5-GlnCysAspLysAlaArgHisMetArg-13

20-GlnValAsnArgHisGlyGln-26

39-GlnGlyAsnArgLysAlaGlnValPheAsp-48

50-AspLeuIleAspArgGlnIle-56

a603

AMPHI Regions - AMPHI

158-ValMetAspGluLeuAsnAlaCysIlePro-167

172-HisAsnProAlaAsnIleSerGlyIleLeuAla-182

186-HisPheProGlyLeuProAsnValGly-194

199-SerPheHisGlnThrMetPro-205

212-AlaValProArgGluLeu-217

245-GlyLysProLeuGluAspIleArgMetIleIleAlaHis-257

260-AsnGlyAlaSerIleThrAlaIleLysAsnGlyLysSerVal-273

280-ThrProIleGluGly-284

299-TyrSerTyrLeuThrSer-304

324-LeuGlyIleSerGlu-328

330-SerAsnAspCysArg-334

357-ArgLeuAlaLysTyrIleAlaSerMet-365

393-ValSerTyrLeuAsp-397

Antigenic Index - Jameson-Wolf

1-LeuSerSerArgArgArgGlyArgAsnAsnAspArgLysCysGlyIle-16

18-PheAlaGlnArgGlyArgLeuLysHisThrProProAsnAlaHisProPheSerAspAspProThrXxxLysLysGlnProGlnThrThrArgArgAsnIleMetSer-53

63-GlySerSerSerLeuLysGlyAlaValIleAspArgLysSerGlySer-78

84-LeuGlyGluArgLeuThrThrProGluAla-93

96-ThrPheSerLysAspGlyAsnLysArgGlnValProLeuSerGlyArgAsnCysHis-114

124-GluLeuGluLysHisGluLeuHisAspArgIleGln-135

142-AlaHisGlyGlyGluLysTyrSerGlu-150

157-AlaValMetAspGluLeuAsn-163

203-ThrMetProGluArgAlaTyr-209

215-ArgGluLeuArgLysLysTyrAlaPheArgArgTyrGlyPheHisGlyThrSerMetArg-234

246-LysProLeuGluAspIleArg-252

258-LeuGlyAsnGlyAla-262

265-ThrAlaIleLysAsnGlyLysSerValAspThrSerMetGly-278

289-ThrArgCysGlyAspIleAspProGlyVal-298

311-AlaGlnValAspGluMetLeuAsnLysLysSerGly-322

327-SerGluLeuSerAsnAspCysArgThrLeuGluIleAlaAlaAspGluGlyHisGluGlyAlaArgLeu-349

380-GlyIleGlyGluAsnSerArgAsnIleArgAlaLysThr-392

403-IleAspThrLysAlaAsnMetGluLysArgTyrGlyAsnSerGlyIle-418

420-SerProThrAspSerSerPro-426

432-ProThrAsnGluGluLeu-437

Hydrophilic Regions - Hopp-Woods

1-LeuSerSerArgArgArgGlyArgAsnAsnAspArgLysCysGlyIle-16

18-PheAlaGlnArgGlyArgLeuLysHisThrPro-28

34-PheSerAspAspProThrXxxLysLysGlnProGlnThrThrArgArgAsnIleMet-52

70-AlaValIleAspArgLysSerGly-77

84-LeuGlyGluArgLeuThrThr-90

-536-

97-PheSerLysAspGlyAsnLysArgGlnValProLeuSerGlyArgAsnCysHis-114
 124-GluLeuGluLysHisGluLeuHisAspArgIleGln-135
 143-HisGlyGlyGluLysTyrSerGlu-150
 157-AlaValMetAspGluLeuAsn-163
 204-MetProGluArgAlaTyr-209
 215-ArgGluLeuArgLysLysTyrAlaPhe-223
 246-LysProLeuGluAspIleArg-252
 268-LysAsnGlyLysSerValAspThr-275
 290-ArgCysGlyAspIleAspPro-296
 311-AlaGlnValAspGluMetLeuAsnLysLysSerGly-322
 328-GluLeuSerAsnAspCysArgThrLeuGluIleAlaAlaAspGluGlyHisGluGlyAlaArgLeu-349
 381-IleGlyGluAsnSerArgAsnIleArgAlaLysThr-392
 403-IleAspThrLysAlaAsnMetGluLysArgTyrGly-414
 433-ThrAsnGluGluLeu-437
a604

AMPHI Regions - AMPHI

36-HisArgValValGlnPheAla-42
 53-ValGlyGlyIleHisGlyPheAlaThr-61
 78-ValArgAlaGlyGlySerPhe-84
 95-ArgThrValSerAlaAspPheLeuGluPhePheGlnSerCysGlyIle-110
 114-ValValLeuGlnLeuPheAlaArgValAlaGlnValGlyGlyIleGlnGluAsn-131
 148-ArgHisIleAsnPheIleAspGlnIleAlaGlyTrpGlu-160
 166-ValGlyTrpIleLysLysPheAsp-173
 191-PheGlnAsnCysAlaValLeuHisArg-199

Antigenic Index - Jameson-Wolf

11-AlaAlaCysGlyLysValAspGlnArgThrGlyHisGlyGlyGlyArgAsnGlyAsnArgGlyGlyThrHis-35
 67-GlyGlyGlyArgAspGluGlyAspPheArgArgValArgAlaGlyGlySerPhe-84
 127-GlyIleGlnGluAsnGlyArgAsnAlaArgValAspGluArgGlyPheGln-143
 175-TyrPheGlyCysArgGluArgTyrAlaVal-184
 201-MetGlyAsnAsnGly-205
 211-LeuProAspPheAspCysAlaAsp-218

Hydrophilic Regions - Hopp-Woods

14-GlyLysValAspGlnArgThrGlyHis-22
 24-GlyGlyGlyArgAsnGlyAsnArgGlyGlyThrHis-35
 68-GlyGlyArgAspGluGlyAspPheArgArgValArgAla-80
 127-GlyIleGlnGluAsnGlyArgAsnAlaArgValAspGluArgGlyPhe-142
 178-CysArgGluArgTyrAlaVal-184
 214-PheAspCysAlaAsp-218
a605

AMPHI Regions - AMPHI

13-ArgGlnIleTrpLysIleAlaAsp-20
 38-ThrLeuPheTyrArgPheIleSerGluAsnPheThrAspTyrMetGln-53
 107-LysLeuLysGluIlePheThrAlaIle-115
 128-IleLysGlyLeuPheAspAspPheAsp-136
 141-ArgLeuGlySerThr-145
 155-AlaValLeuLysGlyValAlaGluLeu-163
 173-IleAspLeuPheGlyAlaTyrGluTyrLeuIleSerAsn-186
 188-AlaAlaAsnAlaGlyLys-193
 204-ValSerLysLeuIleAlaArg-210
 217-GluLysValAsnLysIleTyrAspPro-225

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240-PheAspGluHisIle-244
 291-AspSerLysProPheAspAlaValValSerAsn-301
 341-HisAlaLeuAsnTyr-345
 355-ValSerPheProGly-359
 433-GluHisIleAlaGluIleValLysLeuPheAla-443
 452-AlaGlnAsnAlaAlaGlnGlnThr-459
 471-SerTyrValGluProGlu-476
 478-ThrArgGluIleIleAspIle-484
 489-AlaGluIleSerGluThrValAlaLysIleGluArgLeuArgArgGluIleAspGluValIleAlaGluIle
 Glu-513

Antigenic Index - Jameson-Wolf

5-IleGlnGlnArgAlaGlnLeu-11
 18-IleAlaAspGluValArgGlyAlaValAspGlyTrpAsp-30
 44-IleSerGluAsnPheThrAspTyrMetGlnAlaGlyAspSerSerIleAsp-60
 63-AlaMetProAspSer-67
 71-ProGluIleLysAspAspAlaValLysVal-80
 98-AlaHisGlnAsnGluGluLeuAsnThrLysLeuLysGlu-110
 116-GluSerSerAlaSerGlyTyrProSerGluGlnAspIleLysGlyLeuPheAspAspPheAspThrThrSer
 SerArgLeu-142
 146-ValAlaAspLysAsnLysArgLeu-153
 164-AspPheGlySerPheGluAspHisHis-172
 190-AsnAlaGlyLysSerGlyGlyGluPhePheThr-200
 215-GlyGlnGluLysValAsnLysIleTyrAspProAlaCysGlySerGlySer-231
 235-GlnAlaLysLysGlnPheAsp-241
 253-GluIleAsnHisThrThrTyrAsn-260
 280-LeuGlyAspThrLeuThrAsnProLysLeuLysAspSerLysProPheAspAla-297
 310-GlySerGlyAspProThrLeuIleAsnAspAspArgPheAlaPro-324
 330-ProLysSerLysAlaAsp-335
 345-TyrLeuSerGlyArgGlyArgAlaAla-353
 362-TyrArgGlyGlyAlaGluGlnLysIleArg-371
 403-LeuSerLysHisLysAspAsnThrAsp-411
 418-GlyGlyPhePheLysLysGluThrAsnAsnAsnValLeuThrGluGluHisIle-435
 442-PheAlaAspLysAlaAspVal-448
 458-GlnThrValLysAspAsnGlyTyr-465
 473-ValGluProGluAspThrArgGluIleIleAsp-483
 490-GluIleSerGluThrValAlaLysIleGluArgLeuArgArgGluIleAspGluValIleAla-510

Hydrophilic Regions - Hopp-Woods

18-IleAlaAspGluValArgGlyAlaValAsp-27
 55-GlyAspSerSerIle-59
 71-ProGluIleLysAspAspAlaValLysVal-80
 98-AlaHisGlnAsnGluGluLeuAsnThrLysLeuLysGlu-110
 122-TyrProSerGluGlnAspIleLysGlyLeuPheAspAspPheAspThrThrSerSerArgLeu-142
 146-ValAlaAspLysAsnLysArgLeu-153
 167-SerPheGluAspHisHis-172
 191-AlaGlyLysSerGlyGly-196
 215-GlyGlnGluLysValAsnLysIleTyrAsp-224
 235-GlnAlaLysLysGlnPheAsp-241
 287-ProLysLeuLysAspSerLysProPhe-295
 316-LeuIleAsnAspAspArgPheAla-323
 330-ProLysSerLysAlaAsp-335
 348-GlyArgGlyArgAla-352
 364-GlyGlyAlaGluGlnLysIleArg-371
 404-SerLysHisLysAspAsnThrAsp-411

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419-GlyPhePheLysLysGluThrAsn-426
 430-LeuThrGluGluHisIle-435
 442-PheAlaAspLysAlaAspVal-448
 458-GlnThrValLysAspAsnGly-464
 473-ValGluProGluAspThrArgGluIleIleAsp-483
 490-GluIleSerGluThrValAlaLysIleGluArgLeuArgArgGluIleAspGluValIleAla-510

a606**AMPHI Regions - AMPHI**

72-LeuLeuAspHisMetThrArgAspGlu-80
 90-AlaHisValGlyAsnGlyAsp-96
 100-LeuThrLeuIleGlnGlyValValAsnThrPhe-110
 116-ArgIleIleAlaAsn-120
 139-SerMetValPheGlnIleLeuPheGlyPheLeuAlaSerLeuIleVal-154
 171-LysLeuValGlyAlaProLysMetIleSerAlaLeuGlnArg-184
 191-AspLeuProGluGluMetAsnAla-198

Antigenic Index - Jameson-Wolf

13-GluValIleAspThrProArgThrGluGluAla-24
 31-GluAlaGlnAlaArgGlnTrpAsnLeuLysThrProGlu-43
 48-HisSerProGluProAsnAla-54
 57-ThrGlyAlaSerArgAsnSerSer-64
 75-HisMetThrArgAspGluValGluAla-83
 92-ValGlyAsnGlyAsp-96
 122-IleAlaArgAsnAsnAspGlySerGlnSerGlnGlyThr-134
 159-ArgGlnArgGluTyrArgAlaAspAlaGlyAla-169
 182-LeuGlnArgLeuLysGlyAsnProValAspLeuProGluGluMetAsn-197
 203-GlyAspThrArgAspSerLeuLeuSerThrHisProSerLeuAspAsnArgIleAlaArgLeuLysSer-22
 5

Hydrophilic Regions - Hopp-Woods

13-GluValIleAspThrProArgThrGluGluAla-24
 59-AlaSerArgAsnSer-63
 75-HisMetThrArgAspGluValGluAla-83
 124-ArgAsnAsnAspGlySerGlnSer-131
 159-ArgGlnArgGluTyrArgAlaAspAlaGlyAla-169
 183-GlnArgLeuLysGlyAsnPro-189
 191-AspLeuProGluGluMetAsn-197
 203-GlyAspThrArgAspSerLeu-209
 214-ProSerLeuAspAsnArgIleAlaArgLeuLysSer-225

a607**AMPHI Regions - AMPHI**

18-ArgLeuLeuThrAlaLeuAlaLeu-25
 70-PheMetGlyIleMetAlaAlaLeuAsnProMetIleAlaGln-83
 90-ThrAspGluValGlyGluThr-96
 104-GlyLeuPheLeuGlyValPheGlyMetValLeuMetTrpAlaAlaIleThrProPheArgAsnTrpLeuThr
 LeuSerAspTyrValGluGlyThrMet-136
 151-MetValHisArgAlaLeuHisAlaTyrAlaSerSer-162
 226-PhePheArgProPheGly-231
 244-PheLysGlnIleTrpLysIleGlyAla-252
 320-AlaArgTyrIleSerGlyValSerLeu-328
 337-IleThrValLeuSerLeuVal-343
 373-PheGlnProAlaAspPheThrGlnCysIleAlaSerTyrAla-386
 424-TyrGlyPheTrpThrAlaLeuIleAla-432

Antigenic Index - Jameson-Wolf

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15-LysGluValArgLeu-19
 47-GlyAlaGlyLysGluAspLeuAla-54
 86-GlyAlaGlyLysThrAspGluValGlyGluThrGlyArgGlnGlyIle-101
 121-ProPheArgAsnTrp-125
 128-LeuSerAspTyrValGluGlyThr-135
 160-AlaSerSerLeuAsnArgProArgLeu-168
 234-AlaLysPheGlyLysProAspTrp-241
 311-SerLeuGlyArgArgGluPheSerArgAlaArgTyrIleSer-324
 353-TyrAsnAsnAspPro-357
 388-ArgGlyTyrLysValThrLys-394
 447-LeuCysSerArgGluMetValArgSerHisLysAlaVal-459

Hydrophilic Regions - Hopp-Woods

15-LysGluValArgLeu-19
 47-GlyAlaGlyLysGluAspLeuAla-54
 88-GlyLysThrAspGluValGlyGluThrGlyArg-98
 163-LeuAsnArgProArg-167
 312-LeuGlyArgArgGluPheSerArg-319
 390-TyrLysValThrLys-394
 447-LeuCysSerArgGluMetValArgSerHisLysAlaVal-459

a608**AMPHI Regions - AMPHI**

66-AlaValGlnLysIleLeuGln-72
 93-ValLeuSerLeuLeu-97
 103-ArgAlaSerAspGluLeuAlaArgIlePheGlyThrGln-115
 124-AspIleGlyHisGlyIleLysGlnIleGlyArgAsnIleAlaGluGlnIleGlyArgPheSerArgGluPro
 GluSerAla-150
 154-AsnGluAlaLeuAlaAspCysLeuAspGluIleSerArgLeuArgAspGlyValGluArgLeuAsnGluArg
 LeuAspArgLeu-181

Antigenic Index - Jameson-Wolf

13-LeuGlnSerProAspSerArgSerGluLeu-22
 39-LeuAlaGlyArgIleThrGluAspGlyLeuLeuSerAlaGlyAsnGlyPheAlaAspThrGluIleThrPheA
 rgAsnSerAla-66
 71-LeuGlnGlyGlyGluProGlyAlaGlyAspIleGlyLeuGluGly-85
 98-GlySerLeuArgSerArgAlaSerAspGluLeuAla-109
 114-ThrGlnAlaAspIleGlySerArgAlaAlaAsp-124
 131-GlnIleGlyArgAsnIleAla-137
 139-GlnIleGlyArgPheSerArgGluProGluSerAlaAsnIleGlyAsn-154
 156-AlaLeuAlaAspCysLeuAspGluIleSerArgLeuArgAspGlyValGluArgLeuAsnGluArgLeuAsp
 ArgLeuGluArgAspIleTrp-186

Hydrophilic Regions - Hopp-Woods

15-SerProAspSerArgSerGluLeu-22
 39-LeuAlaGlyArgIleThrGluAspGlyLeu-48
 56-AlaAspThrGluIleThrPhe-62
 74-GlyGluProGlyAlaGly-79
 81-IleGlyLeuGluGly-85
 100-LeuArgSerArgAlaSerAspGluLeuAla-109
 116-AlaAspIleGlySerArgAlaAlaAsp-124
 139-GlnIleGlyArgPheSerArgGluProGluSerAlaAsnIleGly-153
 156-AlaLeuAlaAspCysLeuAspGluIleSerArgLeuArgAspGlyValGluArgLeuAsnGluArgLeuAsp
 ArgLeuGluArgAspIleTrp-186

a609**AMPHI Regions - AMPHI**

-540-

15-ThrLeuAspAlaPheVal-20
 30-HisHisIlePheHisGluPheArgValPheValGlyPhePhe-43
 52-PheGluGlnAlaValGlu-57
 67-IleAspAspPheLeu-71
 114-ValAlaValCysThrVal-119

Antigenic Index - Jameson-Wolf

10-AlaLeuAspAspGluThrLeu-16
 20-ValGlyAsnGlnArgSerSerAspIleAla-29
 69-AspPheLeuAspThrAspPheGlyIle-77
 79-SerGlnAlaAspGlyAsnValArg-86
 99-GlyThrArgAlaLysArgGlyTyrGlyAsnHisAspLeu-111
 124-ArgGluAlaAspIle-128

Hydrophilic Regions - Hopp-Woods

10-AlaLeuAspAspGluThrLeu-16
 23-GlnArgSerSerAspIle-28
 79-SerGlnAlaAspGlyAsnVal-85
 100-ThrArgAlaLysArgGlyTyrGly-107
 124-ArgGluAlaAspIle-128

a610**AMPHI Regions - AMPHI**

6-MetGlnPheProTyr-10
 14-SerAlaSerArgMetArgArgMetArgArg-23
 98-GluArgAlaGlnGluAlaTyr-104
 111-ProSerThrValArgAlaLeuArgGluArg-120
 187-IleArgGluAlaLeuGlu-192
 208-TyrAlaSerAlaPheTyrGlyProPheArgAsp-218
 223-SerGlyAsnLeuGlyLysAlaAsp-230
 258-LeuAspValValArgArgValLysAspGlu-277
 296-AlaAlaValAlaAsn-300

Antigenic Index - Jameson-Wolf

11-ArgAsnValSerAlaSerArgMetArgArgAspAspPheSerArgArgLeuMetArgGluHisThrLeuThrAlaAspAsp-40
 50-GlySerAlaArgGluGluAspValProSerMetProGlyValLysArgGlnSerLeuAsp-69
 75-AlaGluGluAlaValLys-80
 94-AlaAsnLysThrGluArgAlaGlnGluAlaTyrAsnProGluGlyLeuVal-110
 115-ArgAlaLeuArgGluArgPhePro-122
 139-GlyGlnAspGlyLeuThrAspGluAsnGlyTyrValMetAsnAspGluThrVal-156
 175-AlaProSerAspMetMetAspGlyArgIleGlyAlaIleArgGluAlaLeuGluAspAlaGlyHis-196
 215-ProPheArgAspAlaValGlySerSerSerGlyAsnLeuGlyLysAlaAspLysLysThrTyrGlnMetAspProAlaAsnThrAspGluAlaLeuHis-246
 250-LeuAspIleGlnGluGlyAlaAsp-257
 270-ValValArgArgValLysAspGluPheGlyVal-280
 302-TrpLeuAspGlyGlyLysValVal-309
 317-LysArgAlaGlyAlaAspGly-323
 331-GluAlaAlaLysMetLeuLysArg-338

Hydrophilic Regions - Hopp-Woods

14-SerAlaSerArgMetArgArgMetArgArgAspAspPheSerArgArgLeuMetArgGluHisThrLeuThrAla-38
 50-GlySerAlaArgGluGluAspValProSer-59
 61-ProGlyValLysArgGlnSerLeuAsp-69
 75-AlaGluGluAlaValLys-80

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95-AsnLysThrGluArgAlaGlnGluAlaTyrAsn-105
 115-ArgAlaLeuArgGluArgPhePro-122
 141-AspGlyLeuThrAspGluAsnGly-148
 151-MetAsnAspGluThrVal-156
 178-AspMetMetAspGlyArgIleGlyAlaIleArgGluAlaLeuGluAspAlaGly-195
 216-PheArgAspAlaValGly-221
 225-AsnLeuGlyLysAlaAspLysLysThrTyrGln-235
 238-ProAlaAsnThrAspGluAlaLeuHis-246
 250-LeuAspIleGlnGluGlyAlaAsp-257
 270-ValValArgArgValLysAspGluPheGly-279
 317-LysArgAlaGlyAla-321
 331-GluAlaAlaLysMetLeuLysArg-338

a611**AMPHI Regions - AMPHI**

15-CysArgLeuPheGlyLysLeuSerLeu-23
 26-ArgLeuLeuLeuGlyLeu-31
 48-ArgSerValArgArgValIle-54
 63-GlnValValAlaVal-67
 104-ValPheIleGluAspPheVal-110
 129-LeuGlyPheLeuGlyAsnValLeuArgThr-138

Antigenic Index - Jameson-Wolf

1-MetProSerGluAsnArgMetGlyLysArgGlnLeuAla-13
 32-CysArgSerGlyValCysArgGlyArgCys-41
 45-PheProSerArgSerValArgArgValIlePheArgArgValArgIle-60
 119-AsnProAlaAspPheArgIle-125
 142-AlaSerGlnGluAsp-146

Hydrophilic Regions - Hopp-Woods

1-MetProSerGluAsnArgMetGlyLysArgGlnLeuAla-13
 35-GlyValCysArgGlyArgCys-41
 53-ValIlePheArgArgValArgIle-60
 121-AlaAspPheArgIle-125
 142-AlaSerGlnGluAsp-146

a612**AMPHI Regions - AMPHI**

6-AsnIleAlaLysLysLeuAlaGlyVal-14
 55-AlaAspLysAlaValGluLysCysAlaGluAsnValLeu-67
 81-GlyAsnPheProAsn-85
 101-AsnProTyrXxxLysLeuAsnLysSerLysSerProAspIlePheArgArgPhePheXxxGlyHisSer-12
 3

Antigenic Index - Jameson-Wolf

7-IleAlaLysLysLeuAlaGlyValAsp-15
 17-IleAlaPheAspPheAspGly-23
 27-AspPheGlyArgAspAlaValArgHisSerGlyVal-39
 57-LysAlaValGluLysCysAlaGlu-64
 97-GlyHisHisArgAsnProTyrXxxLysLeuAsnLysSerLysSerProAspIlePheArg-116

Hydrophilic Regions - Hopp-Woods

7-IleAlaLysLysLeuAlaGlyValAsp-15
 28-PheGlyArgAspAlaValArg-35
 57-LysAlaValGluLysCysAlaGlu-64
 105-LysLeuAsnLysSerLysSerProAspIlePhe-115
a613

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AMPHI Regions - AMPHI

7-SerArgArgSerLeu-11
 95-MetProArgMetArgSer-100
 103-SerProMetSerProAla-108
 115-ArgIlePheCysThrAlaLeuLeuArgLys-124
 140-SerSerValMetArgPro-145
 168-LeuSerGlyLeuCysArgIle-174

Antigenic Index - Jameson-Wolf

1-MetSerArgSerSerArgSerArgArgSerLeuArgArgSerThrProSerArg-18
 23-SerSerArgGlnSerAlaArgAla-30
 35-PheAlaAspSerGlySerArgGluAsnLeu-44
 73-ProLysIleArgAlaAsnSerSerAspAlaArgGluArgArgLeuProSerArgAspSerThrAla-94
 96-ProArgMetArgSerProSerSerProMetSerProAlaProGlySerProProTrp-114
 130-AlaLysProPheProAlaGluSerLysProSerSerValMetArgProAlaSer-147
 161-LysAlaAlaSerSerGluArgLeuSerGlyLeuCysArgIleArgArg-176
 178-MetMetGlyArgArgAlaAspIlePheSerAspArgGlyGlyGlu-192

Hydrophilic Regions - Hopp-Woods

1-MetSerArgSerSerArgSerArgArgSerLeuArgArgSerThrProSer-17
 24-SerArgGlnSerAlaArgAla-30
 38-SerGlySerArgGluAsnLeu-44
 73-ProLysIleArgAlaAsnSerSerAspAlaArgGluArgArgLeuProSerArgAspSerThrAla-94
 96-ProArgMetArgSerProSer-102
 133-PheProAlaGluSerLysProSerSerValMetArg-144
 161-LysAlaAlaSerSerGluArgLeuSerGly-170
 172-CysArgIleArgArg-176
 178-MetMetGlyArgArgAlaAspIlePheSerAspArgGlyGlyGlu-192

a614**AMPHI Regions - AMPHI**

20-SerGlnPheIleGlnGlnVal-26
 65-AsnLeuIleLysThrLeuLeuAsp-72
 90-AlaLeuPheTyrSerLeuLeuProValLeu-99
 144-ValAlaGlyCysAspGluAlaLysGluGluValGlnGluIleValAspTyrLeuLysAlaProAsnArgTyr
 GlnSerLeu-170
 210-AspPheValGluMetPheVal-216
 222-ArgValArgAspMetPheGluGln-229
 242-GluIleAspAlaValGlyArg-248
 295-ProAlaLeuGlnArgProGlyArgPheAsp-304
 333-SerValAspLeuLeuSerLeuAla-340
 349-AlaAspLeuAlaAsnLeuValAsn-356

Antigenic Index - Jameson-Wolf

7-LeuAspGlyLysLysGluAspAsnGlyGlnIleGlu-18
 26-ValAsnAsnGlyGluValSerGly-33
 45-LeuIleLysGlyGluArgThrAspLysSerThrPhe-56
 60-AlaProLeuAspAspAsnLeuIle-67
 70-LeuLeuAspLysAsnValArgValLysValThrProGluGluLysProSerAla-87
 111-MetGlnThrGlyGlyGlyGlyLysGlyGly-120
 123-SerPheGlyLysSerArgAlaArgLeuLeuAspLysAspAlaAsnLys-138
 145-AlaGlyCysAspGluAlaLysGluGluValGlnGlu-156
 161-LeuLysAlaProAsnArgTyrGlnSerLeuGlyGlyArgValProArgGly-177
 182-GlySerProGlyThrGlyLysThrLeuLeu-191
 207-SerGlySerAspPhe-211
 219-GlyAlaSerArgValArgAspMetPheGluGlnAlaLysLysAsnAla-234

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241-AspGluIleAspAlaValGlyArgGlnArgGlyAlaGlyLeuGlyGlyAsnAspGluArgGluGlnThr
 Leu-265
 272-MetAspGlyPheGluSerAsnGln-279
 287-ThrAsnArgProAspValLeuAspProAlaLeuGlnArgProGlyArgPheAspArg-305
 311-LeuProAspIleArgGlyArgGluGlnIle-320
 323-ValHisSerLysLysValProLeuAspLysSerValAsp-335
 341-ArgGlyThrProGlyPheSerGly-348
 362-AlaGlyArgArgAsnLysValLysValAspGlnSerAspLeuLysThrProLysThrLysSer-382

Hydrophilic Regions - Hopp-Woods

7-LeuAspGlyLysLysGluAspAsnGlyGln-16
 27-AsnAsnGlyGluValSer-32
 46-IleLysGlyGluArgThrAspLysSerThr-55
 61-ProLeuAspAspAsnLeuIle-67
 70-LeuLeuAspLysAsnValArgValLysValThrProGluGluLysProSer-86
 125-GlyLysSerArgAlaArgLeuLeuAspLysAspAlaAsnLys-138
 145-AlaGlyCysAspGluAlaLysGluGluValGlnGlu-156
 162-LysAlaProAsnArg-166
 171-GlyGlyArgValProArg-176
 221-SerArgValArgAspMetPheGluGlnAlaLysLysAsnAla-234
 241-AspGluIleAspAlaValGlyArgGlnArgGlyAlaGly-253
 256-GlyGlyAsnAspGluArgGluGlnThr-264
 273-AspGlyPheGluSer-277
 287-ThrAsnArgProAspValLeuAsp-294
 296-AlaLeuGlnArgProGlyArgPheAspArg-305
 312-ProAspIleArgGlyArgGluGlnIle-320
 324-HisSerLysLysValProLeuAspLysSerValAsp-335
 362-AlaGlyArgArgAsnLysValLysValAspGlnSerAspLeuLysThrProLysThrLys-381
a616

AMPHI Regions - AMPHI

6-LysMetValValGlyLeu-11
 13-AsnProGlyLysGluTyrGlu-19
 48-PheGlyGluValAlaArgAla-54
 77-ValAlaAlaLeuAlaGlnPheTyrLys-85
 115-GlyHisAsnGlyLeuLysAspIle-122
 161-ProThrAspArgCysArgArgGlnIlePro-170
 174-ThrArgHisProCysArgGlnMetArgGly-183
 201-ThrAlaCysSerArgPheProTyr-208
 265-AlaProValGlnAsnLeuProAsnValAla-274
 297-GlyGlyIleTyrSerLeuLeuPhe-304
 317-PheAspLysAlaAla-321
 355-CysPheAlaLeuPheSerGluCysAlaGlnAlaPhe-366
 368-AlaThrArgThrGlySerLeuGlyAspValLeuAlaAspMetAlaGlyThrValLeu-386

Antigenic Index - Jameson-Wolf

11-LeuGlyAsnProGlyLysGluTyrGluGlnThrArgHisAsnAlaGlyPhe-27
 39-AlaSerPheLysGluGluLysLysPhePhe-48
 51-ValAlaArgAlaThrLeuProAspGlyAsp-60
 65-LysProThrThrPheMetAsnArgSerGlyGlnAla-76
 86-IleLysProGluGlu-90
 96-AspGluLeuAspIleProCysGlyArgIleLysPhe-107
 109-LeuGlyGlyGlyAsnGlyGlyHisAsnGlyLeuLysAspIleGlnAla-124
 127-GlyThrAlaAspTyrTyrArg-133
 138-IleGlyHisProGlyAspArgAsnLeu-146

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152-LeuAsnLysProSerThrGluXxxProProThrAspArgCysArgArgGlnIleProAlaSerHisThrArg
HisProCysArgGlnMetArgGlyAsnProLeuPro-187
190-GlnMetThrArgCysArgLeuLysProPheGlnThrAlaCysSerArgPheProTyrProAsnSerHisAsp
ArgThrGlnAla-217
219-TyrProAsnArgIleHisProArgHisArgArgAsnProArgPheProAla-235
238-MetGlnHisArgArgArgThrIleArgArgArgSerGlyThrMetAlaArgHisThrCysArgThrArgArg
GlnIlePro-264
266-ProValGlnAsnLeuProAsnValAlaGlyArgGlyGlyGlyMetLysLeuProArgAsnArgPheSer-28
8
306-AlaAlaAspThrAlaProProPheProHisPheAspLysAlaAla-321
366-AlaPheLysThrGlyLysLeuProIle-344
368-AlaThrArgThrGlySerLeuGly-375
392-ArgAlaAlaAspArgProAsp-398

Hydrophilic Regions - Hopp-Woods

13-AsnProGlyLysGluTyrGluGlnThrArgHis-23
39-AlaSerPheLysGluGluLysLysPhePhe-48
86-IleLysProGluGlu-90
96-AspGluLeuAspIleProCysGlyArgIleLysPhe-107
117-AsnGlyLeuLysAspIleGlnAla-124
140-HisProGlyAspArgAsnLeu-146
155-ProSerThrGluXxxProProThrAspArgCysArgArgGlnIlePro-170
172-SerHisThrArgHisProCysArgGlnMetArgGlyAsnPro-185
190-GlnMetThrArgCysArgLeuLysPro-198
210-AsnSerHisAspArgThrGln-216
223-IleHisProArgHisArgArgAsnProArg-232
238-MetGlnHisArgArgArgThrIleArgArgArgSerGlyThrMet-252
255-HisThrCysArgThrArgArgGlnIle-263
274-AlaGlyArgGlyGlyGly-279
281-LysLeuProArgAsnArgPhe-287
306-AlaAlaAspThrAla-310
316-HisPheAspLysAlaAla-321
336-AlaPheLysThrGlyLys-341
392-ArgAlaAlaAspArgProAsp-398
a619

AMPHI Regions - AMPHI

50-LysLeuAlaAlaLeuLeu-55
66-GlnLeuPheGlnThrLeuThrAsn-73
134-GlnGlyGlyArgAspLeu-139
146-GlyValIlePheGlyIleLeuPheArgSerLeuSerSerLeuLeuSerArg-162
165-AspProGluGluPhe-169
175-AsnMetPheAlaGlyPheAsnThrValHisSer-185
246-AlaValValGlyProValSerPhePheGlyLeuLeuAlaAlaSerLeuAlaAsnHisPheSer-266
303-LeuSerValValValGluPhe-309

Antigenic Index - Jameson-Wolf

1-MetProSerGluLysAsnIle-7
11-AlaGlySerSerArgPro-16
35-AsnValLysGlyAspTrpAsp-41
132-IleLysGlnGlyGlyArgAspLeuPro-140
163-MetIleAspProGluGluPheThr-170
203-TrpArgGluArgTyrArgLeu-209
213-LeuLeuGlyArgAspGlnAla-219
265-PheSerProSerValLysHisSerVal-273

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Hydrophilic Regions - Hopp-Woods

1-MetProSerGluLysAsnIle-7
 134-GlnGlyGlyArgAspLeuPro-140
 163-MetIleAspProGluGluPheThr-170
 203-TrpArgGluArgTyrArgLeu-209
 213-LeuLeuGlyArgAspGlnAla-219
 269-ValLysHisSerVal-273

a620**AMPHI Regions - AMPHI**

9-ValAlaValSerAlaLeuSerAlaCysArgGlnAla-20
 31-IleSerAspArgSerVal-36
 67-SerThrIleLysGlnMetPheGlyTyrThrLysLeuProGluGluProLysGlyIleArgValIleTyrValT
 hrAspMetGlyAsnValThrAspTrpThr-100
 139-GlnAlaGluLysPhe-143

Antigenic Index - Jameson-Wolf

15-SerAlaCysArgGlnAlaGluGluGlyProProProLeuProArgGlnIleSerAspArgSerValGlyHis-
 38
 43-AsnLeuThrGluHisAsnGlyProLysAla-52
 57-AsnGlyLysProAspGlnProVal-64
 75-TyrThrLysLeuProGluGluProLysGlyIle-85
 97-ThrAspTrpThrAsnProAsnAlaAspThrGluTrpMetAspAlaLysLys-113
 125-GlyMetGlyAlaGluAspAlaLeuProPheGlyAsnLysGluGlnAlaGluLysPheAlaLysAspLysGly
 GlyLysValValGlyPheAspAspMetProAspThrTyr-161

Hydrophilic Regions - Hopp-Woods

18-ArgGlnAlaGluGluGlyProProProLeu-27
 30-GlnIleSerAspArgSerVal-36
 46-GluHisAsnGlyProLys-51
 58-GlyLysProAspGln-62
 77-LysLeuProGluGluProLysGlyIle-85
 103-AsnAlaAspThrGluTrpMetAspAlaLysLys-113
 127-GlyAlaGluAspAlaLeu-132
 135-GlyAsnLysGluGlnAlaGluLysPheAlaLysAspLysGlyGlyLys-150
 155-AspAspMetProAsp-159

a622**AMPHI Regions - AMPHI**

28-LeuProGluAlaValArgAsnLeuAlaArg-37
 62-GluGluIleIleArgTrpLeuAlaAsp-70
 112-IleLeuGlyGlnIleLysAspAlaValArgValAlaGln-124
 131-LysLysLeuAsnAlaLeuPheGlnLys-139
 142-SerValAlaLysGluVal-147
 169-GluGlnIlePheProAspIleGlyAsp-177
 187-GluMetIleGluLeuValAla-193
 214-AlaGlnGluLeuCysAspLys-220
 232-AspLeuProAlaIleLeuHis-238
 288-AspLeuAsnAspAla-292
 297-ValAspAspMetValAsnIleValGlnSerGly-307
 324-GluLysValAlaGluPheValArgGlnGln-333
 345-LeuArgAspGluGlyGluLys-351
 354-LysGlnValLeuGluAsnAlaMetLysGlnLeuAlaLys-366
 384-LysLeuLeuHisSerProThrGlnThrLeuAsnLysAlaGlyGlu-398

Antigenic Index - Jameson-Wolf

16-SerIleArgGluLysLeuAla-22

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30-GluAlaValArgAsnLeuAlaArgSerAsnAlaAla-41
 49-ThrCysAsnArgThrGlu-54
 57-CysValGlyAspSerGluGluIleIle-65
 75-ProIleGluGluIleSerProTyrLeu-83
 90-GluThrValArgHis-94
 115-GlnIleLysAspAlaValArgValAlaGlnGluGlnGluSerMetGlyLysLysLeu-133
 142-SerValAlaLysGluValArgThrAspThrAlaValGlyGluAsnSerVal-158
 174-AspIleGlyAspLeuAsn-179
 199-LysSerProArgLeu-203
 210-ThrLeuAlaArgAlaGlnGluLeuCysAspLysLeuGlyValAsnAlaGlu-226
 257-GlyMetValGluArgAlaLeuLysGlnArgGlnSer-268
 277-AlaValProArgAspIleGluAlaGluValGlyAspLeuAsnAsp-291
 305-GlnSerGlyLysGluAlaArgGlnLysAlaAlaAla-317
 321-LeuValSerGluLysValAlaGluPheValArgGlnGlnGlnGlyArgGlnSerVal-339
 343-ArgAlaLeuArgAspGluGlyGluLysAlaArgLysGlnValLeu-357
 368-AlaThrAlaGluGluValLeuGlu-375
 381-LeuThrAsnLysLeuLeuHisSerProThrGlnThrLeuAsnLysAlaGlyGluGluAspLysAspLeuVal-404

Hydrophilic Regions - Hopp-Woods

16-SerIleArgGluLysLeuAla-22
 30-GluAlaValArgAsnLeuAlaArgSerAsnAlaAla-41
 59-GlyAspSerGluGluIleIle-65
 75-ProIleGluGluIleSer-80
 90-GluThrValArgHis-94
 115-GlnIleLysAspAlaValArgValAlaGlnGluGlnGluSerMetGlyLysLysLeu-133
 142-SerValAlaLysGluValArgThrAspThrAlaValGlyGluAsnSerVal-158
 210-ThrLeuAlaArgAlaGlnGluLeuCysAsp-219
 257-GlyMetValGluArgAlaLeuLysGlnArgGlnSer-268
 277-AlaValProArgAspIleGluAlaGluValGlyAspLeuAsn-290
 305-GlnSerGlyLysGluAlaArgGlnLysAlaAlaAla-317
 321-LeuValSerGluLysValAlaGluPheValArg-331
 333-GlnGlnGlyArgGlnSer-338
 343-ArgAlaLeuArgAspGluGlyGluLysAlaArgLysGlnValLeu-357
 368-AlaThrAlaGluGluValLeuGlu-375
 392-ThrLeuAsnLysAlaGlyGluGluAspLysAspLeuVal-404

a624**AMPHI Regions - AMPHI**

14-LeuLeuLeuGlyIleIleGlyIlePheLeuPro-24
 45-ArgPheHisArgTrpLeuHis-51
 58-ProMetValHisAsn-62
 92-PheProGlnArgTrpTrpValGlyAla-100
 102-SerSerValPheCysSerLeuValAlaIle-111

Antigenic Index - Jameson-Wolf

41-LysAlaSerProArgPheHisArgTrp-49
 51-HisArgHisArgTyrPheGlyProMet-59
 63-TrpGluGlnAsnGlyAlaValProArgLysAlaLys-74
 115-ArgArgProGluSer-119

Hydrophilic Regions - Hopp-Woods

67-GlyAlaValProArgLysAlaLys-74
 115-ArgArgProGluSer-119

a625**AMPHI Regions - AMPHI**

-547-

25-SerGlyArgIleIleSerIleAlaAla-33
 64-LysMetProProGluMetValTyrArgAla-73

Antigenic Index - Jameson-Wolf

5-ArgLysMetLysLysMetThrMetCysThrArgArgVal-17
 57-ProPheLysSerProGlnThrLysMetProPro-67
 73-AlaSerSerSerArgMetLysGly-80
 96-AspAlaProLysThrLysLeuAsnGlyMetArgLysSerAsnValGln-111

Hydrophilic Regions - Hopp-Woods

5-ArgLysMetLysLysMetThrMetCysThrArgArgVal-17
 60-SerProGlnThrLysMetProPro-67
 74-SerSerSerArgMetLysGly-80
 96-AspAlaProLysThrLysLeuAsnGlyMetArgLysSerAsnValGln-111
a627

AMPHI Regions - AMPHI

21-LeuGlnAsnLeuVal-25
 56-IleAlaGluValGlyLysLeuPheLeuGlyIlePheIleThrIlePheProValLeuSerIleLeuLysAlaGlyAlaGlyAlaLeuGlyGlyValValSerLeuValHisAspThrAlaGlyHisProIle-100
 109-GlyIleLeuSerAlaPheLeuAspAsnAla-118
 141-PheHisSerLeuLeuAlaValSer-148
 153-PheMetGlyAlaLeuThrTyrIleGlyAsnAlaProAsnPheMetValLys-169
 181-ThrPhePheGlyTyr-185

Antigenic Index - Jameson-Wolf

3-GlyLeuTrpLysProGluHisProGlyPhe-12
 41-ThrProLysGlnValArgAlaGlyAsnGluPheAsnPhe-53
 94-AspThrAlaGlyHis-98
 128-AlaGlyGlyAspAla-132
 170-AlaIleAlaGluGlnArgGlyValPro-178

Hydrophilic Regions - Hopp-Woods

5-TrpLysProGluHisProGly-11
 43-LysGlnValArgAlaGlyAsn-49
 170-AlaIleAlaGluGlnArgGlyVal-177
a628

AMPHI Regions - AMPHI

10-CysGlyProProAsnSerCysValSerMetLeuAlaAlaPheSerAspGlyThrSerAlaProAlaAla-32
 34-HisThrTrpIleLeuArgSer-40

Antigenic Index - Jameson-Wolf

6-LysProAlaGlyCysGlyProProAsnSer-15
 23-PheSerAspGlyThrSerAla-29
 40-SerValLysArgLeuAsnThrSerLysProArgLeuLysSerSerAla-55
 77-MetAlaAsnGlySerAlaSerThr-84
 91-GlyArgValArgSerAlaValHisLysProAspTrpIleArgLeuArgArgThrSerSerProLeuLys-113
 116-AsnAlaSerGlyAla-120

Hydrophilic Regions - Hopp-Woods

40-SerValLysArgLeuAsnThrSerLysProArgLeuLysSerSerAla-55
 91-GlyArgValArgSerAlaValHisLys-99
 101-AspTrpIleArgLeuArgArgThrSerSer-110
a629

AMPHI Regions - AMPHI

32-ArgTrpSerAspValPheSer-38

-548-

48-IleSerArgLeuProArgThrPhe-55
 116-ValAlaAlaLeuIleGlyMetLeuValPhe-125
 146-IlePheGlyGlyValValGluAlaValAlaThr-156
 167-MetLeuGlyValTrpGlnGlnGlyAsp-175
 191-GlyIleLeuAlaLeuPheAla-197
 205-ThrIleLeuGlyLeuGlyGlu-211
 252-ValValProAsnIleIleSerArgLeuIleGlyAspArgLeuArgGlnSer-268
 285-IleIleGlyArgVal-289
 300-ThrValPheGlyValLeu-305

Antigenic Index - Jameson-Wolf

38-SerLeuSerAspSerGln-43
 50-ArgLeuProArgThr-54
 77-AsnArgPheValGluProSerMetAlaGlyAlaGlyGln-89
 131-ArgLeuProProThrAla-136
 174-GlyAspPheSerGly-178
 260-LeuIleGlyAspArgLeuArgGlnSer-268
 316-ArgLysProAlaHis-320

Hydrophilic Regions - Hopp-Woods

260-LeuIleGlyAspArgLeuArgGln-267
 316-ArgLysProAlaHis-320

a630**AMPHI Regions - AMPHI**

9-LeuPheProAlaMetPheTyrGlyMetTyrAsn-19
 30-ProAspLeuLeuGlnGlnSerIleAlaAsnAspTrpHisTyrAlaLeu-45
 81-GlyGlyPheTrpGluValLeuPheAla-89
 135-PheGlyGlyThrGlyLysAsnPhe-142
 169-AlaValAspGlyTyrSerGlyAlaThrAlaLeuAlaGlnTrp-182
 187-AlaAspGlyLeuLysAsnAlaIle-194
 203-AspAlaPheIleGlyLysLeuProGlySerIleGlyGluValSer-217
 230-PheAlaArgIleAlaSerTrpArgIleIleAlaGlyValMet-243
 247-IleAlaMetSerSerLeuPheAsnPhe-255
 289-ValSerAlaSerPheThrAsnValGlyLysTrpTrpTyrGlyAlaLeuIleGlyValMetCysValLeuIle
 ArgVal-314
 327-IleLeuPheAlaAsnLeuPheAlaProIlePheAspTyrPhe-340

Antigenic Index - Jameson-Wolf

91-ValArgLysHisGluIleAsnGlu-98
 133-GluValPheGlyGlyThrGlyLysAsnPheMet-143
 157-TyrProAlaAsnLeuSerGlyAspAla-165
 186-GlyAlaAspGlyLeuLys-191
 209-LeuProGlySerIleGly-214
 257-GlySerAspThrAsnAla-262
 345-AsnIleLysArgArgLysAlaArgSerAsnGly-355

Hydrophilic Regions - Hopp-Woods

91-ValArgLysHisGluIleAsn-97
 345-AsnIleLysArgArgLysAlaArgSerAsnGly-355

a638**AMPHI Regions - AMPHI**

17-LeuAlaArgPheValAspAsnVal-24
 30-IleValAspIleValGluHis-36
 46-AspIleValLysHisPheGluProLeuGlyLys-56
 118-ArgAlaGlyArgValPro-123

-549-

149-IleGlyArgThrMetGln-154
 198-GluArgTyrValArgArgValTyrGlyTyrGlyThrPro-210
 212-ProValSerPheAspGlyCysArgThrValGlyArgPro-224
 242-SerGlnPheGluArgIleAlaArgProGly-251

Antigenic Index - Jameson-Wolf

13-GlyLysAsnAlaLeu-17
 43-AlaAspGlyAspIle-47
 52-GluProLeuGlyLysHisGln-58
 81-ValAspGlyGluThrGlnIle-87
 99-AlaGlyIleGlyLysAsnAlaVal-106
 113-ValAlaAspAspLeuArgAlaGlyArgValProAsnGlyAsn-126
 135-GlnSerArgValAlaAsp-140
 153-MetGlnIleAspAlaAspArgIleIle-161
 168-AsnGlnGlyAlaArgGlySerPhe-175
 178-IleAsnThrGlyIleHis-183
 188-HisThrGlyThrGlyAsnGlyGlnValAlaGluArgTyrValArg-202
 213-ValSerPheAspGlyCysArgThrValGlyArgProPheAsnArgAsnArgPheValAsp-232
 240-AlaGlySerGlnPheGluArgIleAlaArgProGlyAlaGlyLysCysGly-256

Hydrophilic Regions - Hopp-Woods

43-AlaAspGlyAspIle-47
 52-GluProLeuGlyLys-56
 81-ValAspGlyGluThrGlnIle-87
 113-ValAlaAspAspLeuArgAlaGlyArgValProAsn-124
 136-SerArgValAlaAsp-140
 153-MetGlnIleAspAlaAspArgIleIle-161
 195-GlnValAlaGluArgTyrValArg-202
 216-AspGlyCysArgThrValGly-222
 243-GlnPheGluArgIleAlaArgProGlyAlaGly-253

a639-1**AMPHI Regions** - AMPHI

95-TyrLysAsnAsnArg-99
 137-LeuLysValPheAspAsnIle-143
 157-ValAsnTyrSerAspIleHisAspAsnIleIleAsnLysAla-170
 269-AlaProValSerArg-273
 290-GlnPheProAlaValLeuProGly-297
 322-AspGlyLeuLeuLysLysValGlu-329

Antigenic Index - Jameson-Wolf

13-GluGluThrAlaPro-17
 23-HisAsnAsnIleLeuAspAsnSer-30
 41-AlaMetValArgGluAsnLysIleValGly-50
 52-AlaThrLeuArgValAsnGluArgGlyAsnGly-62
 75-GlyAsnAspIleSerLysGlyArgAspGlyIlePheSerAsnThrSerThrHisAsnThrTyrLysAsnAsnArgPheSerAsp-102
 111-TyrThrAsnAspSerGluIleSerGly-119
 121-IleSerValGlyAsnAsn-126
 135-GluArgLeuLysVal-139
 145-ValGlySerArgAspGlnGlyIle-152
 160-SerAspIleHisAspAsnIleIleAsnLysAlaGlyLys-172
 179-AlaAsnTyrAspLysLeuSerAlaAsnHis-188
 203-GluGlyThrSerLeuHisAspAsnSerPheIleAsnAsnGluSerGlnValLysTyrVal-222
 228-AspTrpSerGluGlyGlyHisGlyAsnTyrTrpSerAspAsnSerAla-243
 246-LeuAsnGlyAspGlyPheGlyAspSerAlaTyrArgProAsnGlyIleIle-262

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297-GlyGlyValValAspSerLysProLeuMetLysProTyrAlaProLysIleGlnThr-315
 318-GlnAlaMetLysAspGlyLeuLeuLysLysValGluThrArgGlnLeuGluTrpGlyArgAlaGluAsnGly
 SerLeuAsn-344

Hydrophilic Regions - Hopp-Woods

41-AlaMetValArgGluAsnLysIleValGly-50
 52-AlaThrLeuArgValAsnGluArgGlyAsn-61
 77-AspIleSerLysGlyArgAspGlyIle-85
 95-TyrLysAsnAsnArgPheSerAsp-102
 113-AsnAspSerGluIleSerGly-119
 135-GluArgLeuLysVal-139
 146-GlySerArgAspGlnGly-151
 180-AsnTyrAspLysLeuSer-185
 299-ValValAspSerLysProLeuMet-306
 318-GlnAlaMetLysAspGlyLeuLeuLysLysValGluThrArgGlnLeuGluTrpGlyArgAlaGluAsnGly
 Ser-342

a640**AMPHI Regions - AMPHI**

6-SerIleLeuLysSerIleGlyIle-13
 22-SerIleLysArgMetSer-27
 47-LeuProAlaTyrAlaGluArgLeuProAspPheLeuAlaLysIleGlnPro-63
 72-ArgTyrSerLysPro-76
 109-SerLysProIleAspThrLeuMetAla-117
 127-AlaLysLeuValAspHis-132

Antigenic Index - Jameson-Wolf

24-LysArgMetSerAlaPheArgAlaArgIle-33
 50-TyrAlaGluArgLeuProAspPheLeuAlaLysIleGlnProSerGluIleValProGlyAlaAspArgTyrS
 erLysProGluGlyLysProMetVal-82
 85-ValTyrLysGlyAspGluGlnLeu-92
 101-AlaValAsnThrArgGlyTyrSerSerLysProIleAsp-113
 118-LeuAlaLysAspGlyThr-123
 128-LysLeuValAspHisHisGlu-134

Hydrophilic Regions - Hopp-Woods

24-LysArgMetSerAlaPheArgAlaArgIle-33
 50-TyrAlaGluArgLeuPro-55
 68-ProGlyAlaAspArgTyrSerLysProGluGlyLysProMetVal-82
 85-ValTyrLysGlyAspGluGlnLeu-92
 118-LeuAlaLysAspGlyThr-123
 128-LysLeuValAspHisHisGlu-134

a642**AMPHI Regions - AMPHI**

6-CysProLeuSerAlaIleSerAlaVal-14
 116-IleLysHisIleValArgAlaPhe-123
 138-GlyValSerAlaPheLysThrLeuArgAlaGlnGluPheLeuGlnHisLeuArgGlyGlyVal-158
 161-PheArgGlyGluGly-165
 167-AspAspValArgLeu-171
 186-AlaAspValAlaValLysAsnLeuGlyAsnLeuMetAlaAlaProAsp-201
 220-ValPheLysGlyValPheHisAsnAlaValArgHisAlaAspGlnLeuGln-236
 270-ValAspGlyValThrAspGlyAla-277
 296-GlnValAspAspPheGlyGluPheAlaValPhe-306
 325-PheArgGlyValAsp-329
 378-AlaGluLeuLeuGlnTrpLeuGlnHisGlnArgAlaPheAspAlaGlyThr-394

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Antigenic Index - Jameson-Wolf

1-AlaCysArgArgIleCysPro-7
 22-ValGlnGlnGluGlyCysGly-28
 34-LeuTyrGluAspLysGluSerGlyAspAspPheAlaAspLysAspPheLeuGln-51
 73-ValAlaGlyAspGlyGlyLysAlaGly-81
 103-PheGlyGlyGlyAlaAspLysLeu-110
 123-PheLysAsnArgGluGlyAlaAspValAspSerAspIleAla-136
 143-LysThrLeuArgAla-147
 161-PheArgGlyGluGlyPheAspAspValArgLeu-171
 175-MetGlyAspGlyCysAsnGlyArgAsnGlyMet-185
 208-AspGluSerAspValValAla-214
 230-ArgHisAlaAspGlnLeuGlnAlaAlaAlaAspLysAspValLeuGluArgAlaGlnThrGly-250
 259-HisGlyGlyCysArg-263
 265-PheGlyIleAspAlaValAspGlyValThrAspGly-276
 290-CysPheGlyAspGluGlnGlnValAspAspPheGly-301
 309-PheGlyGlyAsnGluGluGluValAlaLeu-318
 328-ValAspValAsnGly-332
 344-PheSerGlyAsnArgArgAlaGlyGly-352
 388-ArgAlaPheAspAlaGlyThrGlnArgAsnGly-398
 401-ValMetProArgAsnPro-406

Hydrophilic Regions - Hopp-Woods

1-AlaCysArgArgIleCys-6
 34-LeuTyrGluAspLysGluSerGlyAspAspPheAlaAspLysAspPheLeu-50
 76-AspGlyGlyLysAla-80
 106-GlyAlaAspLysLeu-110
 123-PheLysAsnArgGluGlyAlaAspValAspSerAspIle-135
 143-LysThrLeuArgAla-147
 164-GluGlyPheAspAspValArgLeu-171
 178-GlyCysAsnGlyArgAsnGlyMet-185
 208-AspGluSerAspValValAla-214
 230-ArgHisAlaAspGlnLeuGlnAlaAlaAlaAspLysAspValLeuGluArgAlaGlnThr-249
 269-AlaValAspGlyValThrAspGly-276
 290-CysPheGlyAspGluGlnGlnValAspAspPheGly-301
 311-GlyAsnGluGluGluValAlaLeu-318
 346-GlyAsnArgArgAlaGly-351
 393-GlyThrGlnArgAsnGly-398

a644**AMPHI Regions** - AMPHI

25-CysGlyArgArgPheAspArgPro-32
 55-MetAspThrAlaAlaPheLeuLysHisIleGluSerAlaPheArgArgIlePheAlaAspGlyIleAspLeuMetArgTyrLeu-82
 111-GlnPheGluIleGlnGluValLeuArgIleAlaGly-122
 141-GlnProLeuGlnGluPheGlyAsp-148
 181-ArgGluMetGlnSerTyrTyrGluTyrThrAsp-191
 202-TyrTrpGlnGlyAsn-206
 224-LeuAlaLysValIleAspLeuLeu-231
 276-AlaGlyLeuArgAlaPheGlnAsn-283
 304-LeuGluAsnLeuGluArgTyrValArgAsn-313
 333-GluIleLeuTyrArgTyrValCysHis-341
 343-ValSerProValAlaProValAlaHis-351
 356-AlaAsnIleValLysThrLeuAla-363
 372-GlnMetLeuGlnLys-376
 399-PheThrIlePheGluGlyProAsn-406
 408-MetLeuTyrAlaGluIleTyrAspGlnPheValArgAla-420

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439-AspArgLeuGlnThr-443
 456-LeuProGluAspIleArgSerPhe-463
 481-GlyLysIleIleAlaArgLeu-487

Antigenic Index - Jameson-Wolf

1-MetProSerGluArgSerAlaAspCysCysPro-11
 16-VallysPheArgLysSerThrLeuAsnCysGlyArgArgPheAspArgProIleAsnGlyAsnArgGlnA
 rgLysProMetIleHisThrGluProSerAlaGlnProSerThrMetAsp-56
 64-IleGluSerAlaPhe-68
 71-IlePheAlaAspGlyIleAsp-77
 82-LeuProGluAspLysTrpLeu-88
 99-PheLeuAspLysLysTyrGlyArgLysGlySerGlnPheGluIle-114
 132-XxxXxxXxxGluGly-136
 145-GluPheGlyAspGluAlaGlnIle-152
 159-ValPheLysGlyGluGlyGlyGlyLeu-167
 170-ThrGluProGluThrSerGly-176
 178-AlaIleAlaArgGluMetGlnSerTyrTyrGluTyrThrAspGlyGlnThr-194
 202-TyrTrpGlnGlyAsnSerGlnSerAspPhe-211
 216-AlaLysGluArgLysAsnGlyLysLeuAlaLys-226
 235-LysThrTyrIleArg-239
 241-GluThrLeuAlaSerGluGlyLeuArg-249
 254-AlaValAsnArgIleAspAlaGluMet-262
 270-LeuSerGlnSerAspAlaAlaGly-277
 306-AsnLeuGluArgTyrValArgAsnAspIleArgPheValAspTyrGluArgArgGluIleArgArgArgHis
 GlnVal-331
 381-LysGlyPheGluArgGlyHisThrAlaGlyAsn-391
 403-GluGlyProAsnAspMetLeu-409
 420-AlaThrAlaGluGluLysGluAlaGlyMetLysLeuAspLysAsnGlnThrLeuLeuAspArgLeuGlnThr
 AspAlaArgPhe-447
 449-AlaValAlaArgAspTyrThrLeuProGluAspIleArgSerPheLeu-464
 493-AlaGluHisGluAspThrAla-499
 505-AspIleArgLysAspIleLeuAspCysArgTyrCysGly-517

Hydrophilic Regions - Hopp-Woods

1-MetProSerGluArgSerAlaAspCys-9
 17-LysPheArgLysSerThrLeuAsnCysGlyArgArgPheAspArgProProIleAsnGlyAsnArgGlnArgL
 ysProMetIle-44
 64-IleGluSerAlaPhe-68
 82-LeuProGluAspLysTrpLeu-88
 100-LeuAspLysLysTyrGlyGlyArgLysGlySerGln-111
 145-GluPheGlyAspGluAlaGlnIle-152
 160-PheLysGlyGluGlyGly-165
 170-ThrGluProGluThrSerGly-176
 178-AlaIleAlaArgGluMetGlnSer-185
 216-AlaLysGluArgLysAsnGlyLysLeuAlaLys-226
 254-AlaValAsnArgIleAspAlaGluMet-262
 271-SerGlnSerAspAlaAlaGly-277
 306-AsnLeuGluArgTyrValArgAsnAspIleArgPheValAspTyrGluArgArgGluIleArgArgArgHis
 GlnVal-331
 381-LysGlyPheGluArgGlyHisThr-388
 420-AlaThrAlaGluGluLysGluAlaGlyMetLysLeuAspLysAsnGlnThrLeuLeuAspArgLeuGlnThr
 AspAlaArgPhe-447
 458-GluAspIleArgSerPheLeu-464
 493-AlaGluHisGluAspThrAla-499
 505-AspIleArgLysAspIleLeuAsp-512

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a645**AMPHI Regions - AMPHI**

21-AsnThrLeuAsnArgCysCysLys-28
 87-ArgThrLeuProSerLeuAsnGlyLeuThrLys-97
 149-ThrProLysArgCysSerSerSerIle-157
 163-PheLeuAsnPheMetSerSerCysThrSerLeu-173
 210-SerAlaLysArgSer-214
 249-SerValLeuProLysPro-254

Antigenic Index - Jameson-Wolf

18-GluGlnSerAsnThrLeuAsnArgCysCysLysSerArgMetThrCysSerSerSerArgSerArgSerCysProCys-44
 47-ProMetArgAlaSerGlySerArgValSerSerArgSerArgMet-61
 68-SerLeuCysArgLysAsnThrCysProProArgLeuSerSerArgAsnThrAlaSerArgThrLeuProSer-91
 99-LeuThrAlaArgArgArgLeuGly-106
 110-IleSerGluLysSerArgSerProSerSer-119
 137-ThrLeuAlaArgArgArgLeuSerCysSerPheArgThrProLysArgCysSerSer-155
 184-SerAlaMetProSer-188
 198-LeuLysArgGluArgLeuAla-204
 207-ThrGlyLysSerAlaLysArgSerAlaLys-216
 221-CysSerThrArgSerValValGlyAla-229
 242-AsnAlaAlaArgArgAlaThr-248
 250-ValLeuProLysProThrSerProHisThrArgArgSerIle-263

Hydrophilic Regions - Hopp-Woods

19-GlnSerAsnThrLeu-23
 25-ArgCysCysLysLysSerArgMetThrCysSerSerSerArgSerArgSerCysPro-43
 48-MetArgAlaSerGlySerArgValSerSerArgSerArgMet-61
 69-LeuCysArgLysAsnThrCysProProArgLeuSerSerArgAsnThrAlaSerArgThr-88
 99-LeuThrAlaArgArgArgLeuGly-106
 110-IleSerGluLysSerArgSerProSer-118
 137-ThrLeuAlaArgArgArgLeuSerCys-145
 148-ArgThrProLysArgCysSer-154
 198-LeuLysArgGluArgLeuAla-204
 209-LysSerAlaLysArgSerAlaLys-216
 242-AsnAlaAlaArgArgAlaThr-248
 254-ProThrSerProHisThrArgArgSerIle-263

a647**AMPHI Regions - AMPHI**

38-GlyLysValCysArgCysPheGluGlnVal-47
 69-ThrValPheArgGlnIleIleArgIleValAspHisAla-81

Antigenic Index - Jameson-Wolf

26-GlyLeuValLysGluArgAlaArg-33
 39-LysValCysArgCysPhe-44
 54-GlyThrValGlyGlnThrGluArgGlyAla-63
 79-AspHisAlaAspThrGluArgThrAlaAlaHisSerGlyGlyThrArgGly-95

Hydrophilic Regions - Hopp-Woods

26-GlyLeuValLysGluArgAlaArg-33
 40-ValCysArgCysPhe-44
 56-ValGlyGlnThrGluArgGlyAla-63
 79-AspHisAlaAspThrGluArgThrAlaAla-88

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AMPHI Regions - AMPHI

7-ArgIleGluArgAlaValArg-13
 15-AlaValIleAspValLeuAsnValAsp-23
 44-AlaLeuAlaAspIleArgValLeu-51
 94-AlaValAspLeuHisAlaValIleLysLeuThrAspThrVal-107
 127-GlnGlyValGluGlnGly-132
 152-PheLysGluGlyAsn-156
 182-AlaArgThrLeuGlyAsnValPheHis-190
 194-GlySerGlyValAspGlyIleGlnAlaValValAlaPheAspGlnTyrAla-210

Antigenic Index - Jameson-Wolf

1-MetAsnArgArgAsnAlaArgIleGluArgAlaValArg-13
 23-AspAlaProGlySerGlyThrLeuLeuHisGlnArgGlyLysGlnValGlySerArgAsnAspAlaLeuAla-46
 65-GlyLysLysArgPheValGlnSerArgAsnLeuValGlyArgLysGlnArgAsn-82
 125-MetProGlnGlyValGluGlnGlyCysArg-134
 142-ArgThrGlyPheAspCysArgLeuLysHisPheLysGluGlyAsnAla-157
 172-SerAlaAspThrSerGlyIleAspAlaAspAlaArgThr-184
 191-AsnArgAlaGlySerGlyValAspGly-199

Hydrophilic Regions - Hopp-Woods

1-MetAsnArgArgAsnAlaArgIleGluArgAlaValArg-13
 33-GlnArgGlyLysGlnValGlySerArgAsnAspAlaLeuAla-46
 65-GlyLysLysArgPheValGln-71
 74-AsnLeuValGlyArgLysGlnArgAsn-82
 127-GlnGlyValGluGlnGlyCysArg-134
 143-ThrGlyPheAspCysArgLeuLysHisPheLysGluGlyAsnAla-157
 172-SerAlaAspThrSerGlyIleAspAlaAspAlaArgThr-184
a649

AMPHI Regions - AMPHI

6-LeuSerAlaIleLeuGlyLeuVal-13
 27-ArgAspThrLysHisIleArgLysAlaAsn-36
 57-SerGlnGlyAsnVal-61
 63-GluLeuArgGluAsnLys-68
 71-ArgLysAlaPheArgSerLeu-77

Antigenic Index - Jameson-Wolf

20-GlyThrSerGluProAlaHisArgAspThrLysHisIleArgLysAlaAsnLys-37
 40-LeuHisProGluCysArgLysTyrLeuGluArgArgAlaAla-53
 56-ArgSerGlnGlyAsnValGlnGluLeuArgGluAsnLysLysAlaArgLysAlaPheArgSerLeuProTyrLysGluGlnLysThrGlnCys-86
 92-AlaPheAspAspPheAspGlySerArgPheArgArg-103

Hydrophilic Regions - Hopp-Woods

20-GlyThrSerGluProAlaHisArgAspThrLysHisIleArgLysAlaAsnLys-37
 42-ProGluCysArgLysTyrLeuGluArgArgAlaAla-53
 59-GlyAsnValGlnGluLeuArgGluAsnLysLysAlaArgLysAlaPheArg-75
 78-ProTyrLysGluGlnLysThrGlnCys-86
 92-AlaPheAspAspPheAspGlySerArgPheArgArg-103
a650

AMPHI Regions - AMPHI

15-SerValCysProGly-19
 57-LeuTrpSerGluLeuArgGln-63

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72-ProGluLeuValArgArgHisGlu-79
 89-PheAsnArgValIleAsn-94
 137-SerGlyLeuTrpGln-141
 173-AsnTyrLeuGlnTyrLeuTyrGlyLeuPheGlyAspTrpPro-186
 198-AsnValGlyArgAlaIleAsnArgAlaArg-207
 218-LeuArgMetProAsnGluThr-224
 269-GluAlaIleAlaArgLeuAlaGlyIleThrGlnSer-280
 314-SerAsnTyrLeuAsnAlaAlaProAsp-322
 341-IleSerThrAlaThrGlyMet-347
 349-IleAlaAspIleLysArgLeuAsnAsnLeu-358
 376-LysThrLeuGlnThrAlaSerGlu-383
 433-ValArgThrXxxThr-437

Antigenic Index - Jameson-Wolf

1-MetSerLysLeuLys-5
 24-GlnAsnThrSerSerHis-29
 38-LeuAsnSerSerIleLeuAspLeuProProThrLysGlnTyrPhe-52
 59-SerGluLeuArgGlnGlyPheArgMetGlyGluValAsnProGluLeuValArgArgHisGluSerLysPheIle-83
 92-ValIleAsnArgSerArgProTyr-99
 105-AsnGluValLysLysArgAsnMetProAla-114
 128-ThrLysAlaLysSerHisValGlyAlaSerGly-138
 145-AlaThrGlyArgHisTyrGlyLeuGluLysThrProValTyrAspGlyArgHisAspIle-164
 192-TyrAsnTrpGlyGluGlyAsnValGlyArgAlaIleAsnArgAlaArgAlaGlnGlyLeuGluProThrTyrGluAsnLeuArgMetProAsnGluThrArgAsnTyrVal-228
 247-AsnIleSerAspIleAspAsnLysProTyr-256
 259-AlaValGluProAspArgProLeuAspAsnGluAlaIleAla-272
 294-PheIleProLysSerLysArgLysLeu-302
 318-AsnAlaAlaProAspSer-323
 332-ProAlaAlaLysThrSerLeuSerAspIleSerThr-343
 350-AlaAspIleLysArgLeuAsnAsnLeuAsnGly-360
 370-LeuValAlaLysAsnGlyLysThrLeuGlnThrAlaSer-382
 388-IleAspIleAspAsnThrProAsnThrTyrArgSerAsnMetProAlaGlyThr-405
 411-AlaArgIleArgProAlaAla-417
 428-LeuProGlnLysThrValArgThrXxxThrArgSerProCysProTyrCys-444
 446-ThrCysProCysAspSerArgSerAlaThrSerAsnArgLysThrAspArgHisAlaVal-465

Hydrophilic Regions - Hopp-Woods

1-MetSerLysLeuLys-5
 61-LeuArgGlnGlyPheArgMetGlyGluValAsnProGluLeuValArgArgHisGluSerLysPhe-82
 92-ValIleAsnArgSerArgPro-98
 105-AsnGluValLysLysArgAsnMetProAla-114
 128-ThrLysAlaLysSerHisVal-134
 150-TyrGlyLeuGluLysThrProValTyrAspGlyArgHisAspIle-164
 202-AlaIleAsnArgAlaArgAlaGlnGlyLeu-211
 213-ProThrTyrGluAsnLeuArgMetProAsnGluThrArgAsnTyrVal-228
 249-SerAspIleAspAsn-253
 260-ValGluProAspArgProLeuAspAsnGluAlaIleAla-272
 296-ProLysSerLysArgLysLeu-302
 334-AlaLysThrSerLeu-338
 350-AlaAspIleLysArgLeuAsn-356
 373-LysAsnGlyLysThrLeuGlnThrAlaSer-382
 389-AspIleAspAsnThrProAsnThrTyr-397
 411-AlaArgIleArgPro-415
 431-LysThrValArgThrXxxThrArgSer-439

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447-CysProCysAspSerArgSerAlaThrSerAsnArgLysThrAspArgHisAlaVal-465
a652-1

AMPHI Regions - AMPHI

6-AspIlePheAlaArg-10
52-ArgAspGlyAspLys-56
62-LysGlyValLeuLysAlaValGluHisValAsnAsnGlnIleAlaGlnAla-78
130-LeuTyrArgTyrLeuGlyGlyAlaGlyPro-39
149-ValIleAsnGlyGly-153
173-LysSerPheArgGluAlaLeuArgCys-181
184-GluIlePheHisAlaLeuLysLys-191
266-AlaGluPheAlaGluTyrLeuGluGlyLeuValAsn-277
323-AlaGluGlyIleGluLysGlyVal-330
338-ValAsnGlnIleGlyThrLeuSerGluThrLeuLysAlaValAspLeuAlaLys-355
377-AspLeuAlaValAla-381
391-SerLeuSerArgSerAspArgMetAlaLysTyrAsnGlnLeuLeuArgIleGluGluLeuAlaGluAlaAla
Asp
Tyr-417

Antigenic Index - Jameson-Wolf

11-GluIleLeuAspSerArgGlyAsnProThrValGlu-22
36-AlaValProSerGlyAlaSerThrGlyGlnLysGluAlaLeuGluLeuArgAspGlyAspLysSerArgTyrS
erGlyLysGlyValLeuLysAlaValGluHisValAsn-72
83-AspAlaAsnGluGlnSerTyr-89
97-LeuAspGlyThrGluAsnLysGlyAsnLeuGly-107
121-AlaAlaAlaGluAspSerGlyLeuPro-129
135-GlyGlyAlaGlyProMet-140
151-AsnGlyGlyGluHisAlaAsnAsnSerAsn-161
173-LysSerPheArgGluAlaLeuArgCysGlyAla-183
190-LysLysLeuCysAspSerLysGlyPheProThrThrValGlyAspGluGlyGlyPhe-208
211-AsnLeuAsnSerHisLysGluAlaLeu-219
243-CysAlaSerSerGluPheTyrLysAspGlyLysTyrHisLeuGluAlaGluGlyArgSerTyrThrAsn-26
5
283-SerIleGluAspGlyMetAspGluAsnAspTrpGluGly-295
299-LeuThrGluLysLeuGlyGlyLys-306
309-LeuValGlyAspAspLeu-314
318-AsnProLysIleLeuAlaGluGlyIleGluLysGlyVal-330
352-AspLeuAlaLysArgAsnArgTyrAla-360
363-MetSerHisArgSerGlyGluThrGluAspSerThrIle-375
388-LysThrGlySerLeuSerArgSerAspArgMetAlaLys-400
405-LeuArgIleGluGluGluLeuAlaGluAlaAlaAspTyrProSerLys-420

Hydrophilic Regions - Hopp-Woods

11-GluIleLeuAspSerArgGlyAsnProThrValGlu-22
43-ThrGlyGlnLysGluAlaLeuGluLeuArgAspGlyAspLysSerArgTyrSerGly-61
63-GlyValLeuLysAlaValGlu-69
97-LeuAspGlyThrGluAsnLysGlyAsnLeu-106
121-AlaAlaAlaGluAspSerGly-127
153-GlyGluHisAlaAsn-157
173-LysSerPheArgGluAlaLeuArgCysGlyAla-183
190-LysLysLeuCysAspSerLysGly-197
202-ValGlyAspGluGlyGlyPhe-208
213-AsnSerHisLysGluAlaLeu-219
247-GluPheTyrLysAspGlyLysTyrHisLeuGluAlaGluGlyArgSerTyrThr-264
283-SerIleGluAspGlyMetAspGluAsnAspTrpGluGly-295

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299-LeuThrGluLysLeuGlyGly-305
321-IleLeuAlaGluGlyIleGluLysGlyVal-330
352-AspLeuAlaLysArgAsnArgTyr-359
364-SerHisArgSerGlyGluThrGluAspSerThrIle-375
391-SerLeuSerArgSerAspArgMetAlaLys-400
405-LeuArgIleGluGluGluLeuAlaGluAlaAlaAspTyrProSer-419

a653

AMPHI Regions - AMPHI

6-MetArgMetProGluValThrLysGlyPheSerGlySer-18
60-ThrMetArgLysProArgLeuThr-67
75-AlaLeuIlePheThrCysPheAla-82
96-ThrAlaLeuAlaAlaIleThrCysIle-104
111-LeuGlyLysMetGluGluPheAsn-118

Antigenic Index - Jameson-Wolf

4-GluProMetArgMetProGluValThrLysGlyPheSerGlySer-18
45-GlyCysArgSerThrArgLysThr-52
56-ValArgProGluThrMetArgLysProArgLeuThrAsnSerSerAla-71
86-AsnSerGlyCysAsnAla-91
103-CysIleSerGlyProProCysArgLeuGlyLysMetGluGlu-116
125-SerArgHisLysIleThrProProArgGlyProArgArgVal-138
145-ThrLysSerGlnAsnGlyThrGly-152
154-GlyTyrSerProProAlaThrArgProAla-163

Hydrophilic Regions - Hopp-Woods

4-GluProMetArgMetProGluValThrLys-13
47-ArgSerThrArgLysThr-52
57-ArgProGluThrMetArgLysProArgLeuThrAsn-68
107-ProProCysArgLeuGlyLysMetGluGlu-116
126-ArgHisLysIleThrProProArgGlyProArg-136
158-ProAlaThrArgProAla-163

a656

AMPHI Regions - AMPHI

14-MetAlaArgThrLeuGlyAlaProGlu-22
42-ArgArgProSerThr-46
92-LeuAlaSerLeuAsnLysSerCys-99

Antigenic Index - Jameson-Wolf

6-GlySerThrSerSer-10
19-GlyAlaProGluSerValProAlaGlyLysValAlaAla-31
40-SerPheArgArgProSerThrLeuGlu-48
74-ArgProThrSerLeuArgProLysSerIleAsn-84
94-SerLeuAsnLysSerCysSerLeuAlaArgSerSerAlaGlyValLeuProArgArgArgValProAla-116
120-ThrMetThrSerSerArgSerArgThrArgIleSerGlyGluGluProThrMetTrpLysSerProLysSer-144

Hydrophilic Regions - Hopp-Woods

40-SerPheArgArgProSerThr-46
76-ThrSerLeuArgProLysSer-82
99-CysSerLeuAlaArgSerSer-105
109-LeuProArgArgArgValProAla-116
121-MetThrSerSerArgSerArgThrArgIleSerGlyGluGluProThrMet-138

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140-LysSerProLysSer-144
a657

AMPHI Regions - AMPHI

9-ProAlaMetLeuGly-13
20-LeuGlyArgMetPheThr-25
62-ThrAlaLeuGluGluLeuAlaLysCysAlaAla-72
85-MetArgPheLeuAlaLys-90
140-PheLeuProGlyIleLeuLysThr-147
161-LysThrValAspGluLeuLysAla-168
178-CysValLeuGluLysMetValAsp-185
203-GlnThrPheAspProAlaGluAsnIle-211
232-GlnGlnAlaArgGlnMetAlaGlnArgLeuAlaAspGluLeuAsnTyrValGlyValLeu-251
279-HisThrValAspAlaCysAlaAla-286
314-AsnIleLeuGlyAsp-318

Antigenic Index - Jameson-Wolf

1-MetLysAsnIleSerLeu-6
16-GlyGlyGlyGlnLeuGlyArg-22
37-ValLeuAspProAsnProAsnAlaPro-45
57-ProPheAspAsnGlnThrAlaLeuGluGluLeuAlaLys-69
75-ThrGluPheGluAsnValAsnAlaAspAla-84
91-HisThrAsnValSerProSerGlyAsp-99
106-AsnArgIleGlnGluLysAlaTrpIle-114
128-CysLysAlaGluAspIleThrGluGluSerIle-138
150-LeuGlyTyrAspGlyLysGlyGlnIleArgValLysThrValAspGluLeuLysAlaAlaPheAlaGluHis
ArgGlyValAspCysValLeu-180
182-LysMetValAspLeuArgGlyGluIle-190
196-ArgLeuAsnAsnAspAsnValGlnThrPheAspProAlaGluAsnIleHisGluAsnGly-215
230-IleGlnGlnGlnAlaArgGlnMetAla-238
269-IleAlaProArgProHisAsnSerGlyHisHis-279
288-GlnPheGlnGlnGlnVal-293
300-ProProAlaAspThrLysLeuLeuSer-308
319-ValTrpGlnGluAspGlyGlyGluProAspTrp-329
331-ProLeuGlnSerArgProAspAlaHis-339
344-GlyLysLysThrAlaHisLysGlyArgLysMetGly-355
360-LeuSerThrAspSerAspThrAlaPheGlnGluAlaLysLysLeuHis-375

Hydrophilic Regions - Hopp-Woods

62-ThrAlaLeuGluGluLeuAlaLys-69
75-ThrGluPheGluAsnValAsn-81
128-CysLysAlaGluAspIleThrGluGluSerIle-138

152-TyrAspGlyLysGlyGlnIleArgValLysThrValAspGluLeuLysAlaAlaPheAlaGluHisArgGly
ValAspCysValLeu-180
182-LysMetValAspLeuArgGlyGluIle-190
197-LeuAsnAsnAspAsn-201
206-AspProAlaGluAsnIleHis-212
230-IleGlnGlnGlnAlaArgGlnMetAla-238
269-IleAlaProArgProHisAsn-275
301-ProAlaAspThrLysLeu-306
320-TrpGlnGluAspGlyGlyGluProAsp-328
334-SerArgProAspAla-338
344-GlyLysLysThrAlaHisLysGlyArgLysMetGly-355
362-ThrAspSerAspThrAlaPheGlnGluAlaLysLysLeuHis-375

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a658

AMPHI Regions - AMPHI

28-ArgGlnTyrAlaAspValValGlnPheIleGlyGlnThrLeuArgHisLeuSerArgLeuLeuLeuAsn-50
57-TrpAspAspGlyVal-61
68-ValAsnValPheGlyArgIleGluSer-76
94-GlnValHisHisPhePheGlnAsnAlaIleHisAla-105
128-IleAlaGlnCysSerGlyPheGlnAspAlaGlyGln-139
143-AlaPhePheSerAspValPheGly-150

Antigenic Index - Jameson-Wolf

6-ValArgThrArgArgAspPheValAspAspGlnPheMetArgValAlaAspAsnLysHisPhe-26
55-SerGlyTrpAspAspGlyValGlyGluAspThrVal-66
72-GlyArgIleGluSer-76
84-ThrAlaTyrAspAsnGlyAsn-90
108-PheGlyLysArgGlyPhe-113
131-CysSerGlyPheGlnAspAlaGlyGlnLys-140
155-LeuIleArgArgGlyLeuGln-161
174-ValLeuArgAspGlyAsnAla-180
189-MetPheGlyGluLysThrHisArgIleGly-198
202-PheGluLeuGlyArgAsnSerArgThr-210
216-GlnSerGlyLeuValValLysArgArgThrGln-226
230-GlyLysPheArgCysArgArg
IleArgVal-239
251-PheGlySerAsnSerLysHisSerAla-259

Hydrophilic Regions - Hopp-Woods

6-ValArgThrArgArgAspPheValAsp-14
16-GlnPheMetArgValAlaAspAsnLysHisPhe-26
56-GlyTrpAspAspGlyValGlyGluAspThrVal-66
72-GlyArgIleGluSer-76
135-GlnAspAlaGlyGln-139
174-ValLeuArgAspGlyAsnAla-180
190-PheGlyGluLysThrHisArgIleGly-198
203-GluLeuGlyArgAsnSerArg-209
220-ValValLysArgArgThrGln-226
230-GlyLysPheArgCysArgArgIleArgVal-239
253-SerAsnSerLysHisSerAla-259
a661

AMPHI Regions - AMPHI

19-GlyIleThrAspLysProPheArgArgLeuCysArgAspPheGlyAlaGly-35
37-AlaValCysGluMetLeu-42
75-AspProGlnGlnMetAlaAspAlaAla-83
122-AlaAlaIleLeuGluAlaValValLys-130
152-ProValIleAlaLysIleAlaGlu-159
222-TyrAspArgAlaArgArg-227
235-ProArgPheGluThrLeuArgArgThrArgCys-245
248-AlaCysLeuGluPheGlyArgMetTyrArgHisTyrPheGluPro-262
267-AlaArgValLeuArgArgHis-273

Antigenic Index - Jameson-Wolf

20-IleThrAspLysProPheArgArgLeuCysArgAspPheGlyAlaGly-35

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42-LeuThrSerAspProThrLeuArgAsnThrArgLysThrLeuHisArgSerAspPheAlaAspGluGlyGly-
 55
 72-AlaGlySerAspProGlnGlnMetAlaAspAlaAlaArg-84
 97-AsnMetGlyCysProAlaLysLysValCys-106
 143-GlyTrpHisAspAspHisGlnAsnLeu-151
 157-IleAlaGluAspCysGly-162
 168-XXXProArgThrHisAla-173
 176-AsnValGlnArgArgSerGlyLeuArgProAspCysArgAsnGlnMetProSerGluHisProGlyLeuGly
 GlnArgArgHisTyrLeuAlaAlaLysSerProSerArgProGlnThrAsnArgArgArgArgHisTyrAspArgA
 laArgArgAlaArgGln-230
 235-ProArgPheGluThrLeuArgArgThrArgCysPhe-246
 256-TyrArgHisTyrPheGluProHisProSerHisAlaArgValLeuArgArgHisArgArgCysAlaHisArg
 ThrGlnThrHisArgLeuValHisArgArgAsnAlaArgArgArgThrAspThrSer-298

Hydrophilic Regions - Hopp-Woods

20-IleThrAspLysProPheArgArgLeuCysArgAspPhe-32
 46-ProThrLeuArgAsnThrArgLysThrLeuHisArgSerAspPheAlaAspGluGlyGly-65
 73-GlySerAspProGlnGlnMetAlaAspAlaAlaArg-84
 100-CysProAlaLysLysValCys-106
 157-IleAlaGluAspCysGly-162
 176-AsnValGlnArgArgSerGlyLeuArgProAspCysArgAsnGlnMetProSerGluHisProGlyLeuGly
 GlnArgArgHisTyrLeu-205
 208-LysSerProSerArgProGlnThrAsnArgArgArgArgHisTyrAspArgAlaArgArgAlaArgGln-23
 0
 238-GluThrLeuArgArgThrArgCys-245
 268-ArgValLeuArgArgHisArgArgCysAlaHisArgThrGlnThr-282
 285-LeuValHisArgArgAsnAlaArgArgArgThrAspThrSer-298
 a663

AMPHI Regions - AMPHI

19-ProPheAlaLeuLeuHisLysLeuAlaAspLeuThrGlyLeuLeuAlaTyr-35
 66-LysGlnHisPheLysHisMetAlaLysLeu-75
 87-AlaGlyArgLeuLysSerLeuValArg-95
 168-GluGlyLeuArgAlaLeuValLysGlnPheArgLys-179
 209-ThrIleThrGlyLeuSerArgIleAlaAlaLeuAlaAsn-221
 243-ProAlaTrpGluSer-247
 258-GlnArgMetAsnArgPheIleGluGluArgValArgGluHis-271

Antigenic Index - Jameson-Wolf

38-ValLysProArgArgArgIleGlyGlu-46
 56-TrpAspGlyLysLysArgLysThrValLeu-65
 87-AlaGlyArgLeuLysSer-92
 94-ValArgTyrArgAsnLysHisTyrLeuAsp-103
 105-AlaLeuAlaAlaGlyGluLys-111
 139-TyrSerHisGlnLysAsnLysIleLeuAsp-148
 150-GlnIleLeuLysGlyArgAsnArgTyr-158
 166-ArgThrGluGlyLeuArgAlaLeu-173
 175-LysGlnPheArgLysSerSerAla-182
 188-ProAspGlnAspPheGlyArgAsnAspSerVal-198
 229-ProValArgGluAlaAspAsnThr-236
 243-ProAlaTrpGluSerPheProSerGluAspAlaGlnAlaAspAlaGlnArgMetAsnArgPheIleGluGlu
 ArgValArgGluHisProGlu-273
 280-LysArgPheLysThrArgProGluGlySerProAspPheTyr-293

Hydrophilic Regions - Hopp-Woods

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39-LysProArgArgArgIleGlyGlu-46
 56-TrpAspGlyLysLysArgLysThrValLeu-65
 88-GlyArgLeuLysSer-92
 94-ValArgTyrArgAsn-98
 105-AlaLeuAlaAlaGlyGluLys-111
 142-GlnLysAsnLysIleLeuAsp-148
 150-GlnIleLeuLysGlyArgAsnArgTyr-158
 166-ArgThrGluGlyLeuArgAlaLeu-173
 176-GlnPheArgLysSerSer-181
 190-GlnAspPheGlyArgAsnAspSerVal-198
 229-ProValArgGluAlaAspAsn-235
 248-PheProSerGluAspAlaGlnAlaAspAlaGlnArgMetAsnArgPheIleGluGluArgValArgGluHis
 ProGlu-273
 280-LysArgPheLysThrArgProGluGlySerPro-290

a664**AMPHI Regions - AMPHI**

28-AlaHisArgMetCys-32
 47-AlaAspValPheAspThrAlaHisGlyAlaAlaGly-58
 88-AlaArgProValValGluIle-94

Antigenic Index - Jameson-Wolf

25-SerGlyGlyAlaHisArgMetCysGlyArg-34
 48-AspValPheAspThrAlaHisGly-55
 73-PheLeuGlnArgLysLeuGluPro-80
 108-IleGlyGlyGlyThrAlaValGlyLysAspGluLeuGlyValLysAspValGln-125
 137-AlaHisGlyAspAspHisGluAsn-144
 164-AlaIleProArgGlnSerArgProTrp-172
 175-ProLeuArgTrpCysLysThrArgPhe-183

Hydrophilic Regions - Hopp-Woods

74-LeuGlnArgLysLeuGluPro-80
 113-AlaValGlyLysAspGluLeuGlyValLysAspValGln-125
 137-AlaHisGlyAspAspHisGluAsn-144
 166-ProArgGlnSerArg-170

a665-1**AMPHI Regions - AMPHI**

6-HisTyrLeuLysAspTyrGln-12
 105-LeuTyrAlaSerAla-109
 111-AsnLeuPheThrGlnCysGluProGluGlyPheArgLysIleThr-125
 132-AspValMetSerLysPheThrThrThr-140
 167-ArgHisTrpValLysTrpGluAspProPhe-176
 225-SerLeuLysAsnAlaMetLys-231
 286-GlyIleGluSerValVal-291
 294-GluTyrPheHisAsnTrpThr-300
 307-ArgAspTrpPheGlnLeuSerLeu-314
 329-AspArgAlaSerArgAlaValArgArgIleGluAsnIleArgLeuLeuArgGln-346
 360-ValArgProAlaArgTyrGluGluMetAsnAsnPheTyrThr-373
 380-GlyAlaGluValValArgMetTyrHisThrLeu-390
 396-PheGlnLysGlyMetLys-401
 520-ThrGluAlaValValProSerLeuLeuArgGlyPheSerAlaPro-534
 555-AspAlaPheThrArgTrpGluAlaAlaGln-564
 575-LeuAlaAlaLeuSerAspGlyValGluLeuProLysHisGluLysLeuLeuAlaAlaValGlu-595

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603-LeuAspAsnAlaPheLysAlaLeu-610
 622-AspGlyAlaGluAsnIleAspProLeu-630
 648-LeuProLysTrpHisGluLeuAsnArg-656
 6674-1yTrpArgThrLeuArgAsnValCysArgAla-684
 696-ThrValAlaGluLysTyrAlaGluMetAlaGlnAsnMet-708
 712-TrpGlyIleLeuSer-716
 728-ArgLeuLeuAlaGlnPheAlaAspLysPheSer-738
 758-AspThrLeuGlnGlnValGlnThrAla-766
 782-SerLeuIleGlySerPheSerArgAsnVal-791
 822-ArgLeuValGlnAlaPheAsnLeuCysAsnLysLeu-833

Antigenic Index - Jameson-Wolf
 8-LeuLysAspTyrGlnThrProAlaTyr-16
 26-AspIleAsnGluPro-30
 34-VallLysSerArgLeuThrValGluProLysArgValGlyGlu-47
 49-LeuValLeuAspGlySerAla-55
 79-AlaAspValProSerGluArgPheThrVal-88
 90-ValGluThrGluIleLeuProAlaGluAsnLysSerLeu-102
 114-ThrGlnCysGluProGluGlyPheArgLys-123
 128-IleAspArgProAspValMetSer-135
 142-ValAlaAspLysLysArgTyrPro-149
 154-AsnGlyAsnLysIleAspGlyGlyGluTyrSerAspGlyArgHisTrpValLysTrpGluAspProPheAla
 LysProSer-180
 191-AlaValThrGluAspTyr-196
 200-MetSerGlyArgAsnValLysIle-207
 211-ThrThrGluAlaAspLysProLysVal-219
 230-MetLysTrpAspGluThrArgPhe-237
 255-AsnMetGlyAlaMetGluAsnLysGlyLeu-264
 275-AspSerArgThrAlaThrAspThrAspPheGluGlyIleGlu-288
 295-TyrPheHisAsnTrpThrGlyAsnArgValThrCysArgAspTrp-309
 313-SerLeuLysGluGly-317
 322-ArgAspGlnGluPheSerGlyAspArgAlaSerArgAlaValArgArgIleGluAsn-340
 347-HisGlnPheProGluAspAlaGlyProThrAlaHisProValArgProAlaArgTyrGluGluMetAsn-36
 9
 376-ValTyrGluLysGlyAlaGluVal-383
 394-GluGlyPheGlnLysGlyMet-400
 404-PheGlnArgHisAspGlyGlnAlaValThrCysAspAspPheArg-418
 437-SerGlnAlaGlyThrPro-442
 446-AlaGlnGlyArgLeuLysAsnAsnVal-454
 459-IleLysGlnThrValProThrProAspMetAlaAspLysGlnPro-474
 485-AsnCysAsnGlyGluAlaVal-491
 494-AspTyrGlnGlyLysArgAlaThrGlu-502
 509-GluAlaGluGlnThrPhe-514
 537-LeuAsnTyrProTyrSerAspAspLeu-546
 552-HisAspSerAspAla-556
 578-LeuSerAspGlyValGluLeuProLysHisGluLysLeu-590
 594-ValGluLysValIleSerAspAspLeuLeu-603
 614-ValProSerGluAlaGluLeuTrpAspGlyAlaGluAsnIleAspProLeuArg-631
 633-HisGlnAlaArgGluAlaLeu-639
 652-HisGluLeuAsnArgGlnAlaAlaLysGlnGluAsnGlnSerTyrGluTyrSerProGluAlaAlaGly-67
 4
 677-ThrLeuArgAsnValCys-682
 689-AlaAspProAlaHis-693
 696-ThrValAlaGluLysTyrAlaGlu-703
 719-AsnGlyAsnGluSerAspThrArgAsnArgLeu-729

-563-

733-PheAlaAspLysPheSerAspAspAlaLeuVal-743
 752-GlySerSerArgArgSerAspThrLeuGln-761
 768-GlnHisProLysPheSerLeuGluAsnProAsnLysAlaArgSer-782
 785-GlySerPheSerArgAsnValPro-792
 795-HisAlaGluAspGlySerGlyTyrArgPheIleAla-806
 808-LysValIleGluIleAspArgPheAsnProGlnVal-819
 831-AsnLysLeuGluProHisArgLysAsnLeuVal-841
 844-AlaLeuGlnArgIleArgAlaGlnGluGlyLeuSerLysAspValGlyGluIleVal-862

Hydrophilic Regions - Hopp-Woods

34-VallysSerArgLeuThrValGluProLysArgValGlyGlu-47
 81-ValProSerGluArgPheThrVal-88
 90-ValGluThrGluIleLeuProAlaGluAsnLysSer-101
 116-CysGluProGluGlyPheArg-122
 129-AspArgProAspValMetSer-135
 142-ValAlaAspLysLysArgTyr-148
 154-AsnGlyAsnLysIleAspGlyGlyGluTyrSerAspGlyArgHis-168
 170-VallysTrpGluAspProPheAla-177
 201-SerGlyArgAsnValLys-206
 213-GluAlaAspLysProLysVal-219
 230-MetLysTrpAspGluThrArgPhe-237
 258-AlaMetGluAsnLysGly-263
 275-AspSerArgThrAlaThrAspThrAspPheGluGlyIleGlu-288
 313-SerLeuLysGluGly-317
 322-ArgAspGlnGluPheSerGlyAspArgAlaSerArgAlaValArgArgIleGluAsn-340
 348-GlnPheProGluAspAlaGlyPro-355
 361-ArgProAlaArgTyrGluGluMetAsn-369
 376-ValTyrGluLysGlyAlaGluVal-383
 394-GluGlyPheGlnLysGlyMet-400
 406-ArgHisAspGlyGln-410
 413-ThrCysAspAspPheArg-418
 446-AlaGlnGlyArgLeuLysAsnAsnVal-454
 467-ProAspMetAlaAspLysGlnPro-474
 495-TyrGlnGlyLysArgAlaThrGlu-502
 541-TyrSerAspAspAspLeu-546
 552-HisAspSerAspAla-556
 580-AspGlyValGluLeuProLysHisGluLysLeu-590
 594-ValGluLysValIleSer-599
 616-SerGluAlaGluLeu-620
 622-AspGlyAlaGluAsnIleAspPro-629
 633-HisGlnAlaArgGluAlaLeu-639
 652-HisGluLeuAsnArgGlnAlaAlaLysGlnGluAsnGlnSer-665
 689-AlaAspProAlaHis-693
 696-ThrValAlaGluLysTyrAlaGlu-703
 719-AsnGlyAsnGluSerAspThrArgAsnArgLeu-729
 733-PheAlaAspLysPheSerAsp-739
 753-SerSerArgArgSerAspThr-759
 776-AsnProAsnLysAlaArgSer-782
 795-HisAlaGluAspGlySerGly-801
 808-LysValIleGluIleAspArgPheAsn-816
 831-AsnLysLeuGluProHisArgLysAsnLeuVal-841
 844-AlaLeuGlnArgIleArgAlaGlnGluGlyLeuSerLysAspValGlyGluIleVal-862
a666

AMPHI Regions - AMPHI

-564-

89-GlyTyrAspIleLeuLysGlnGlyGlySer-98
 162-LeuLysPheMetGluAlaVal-168

Antigenic Index - Jameson-Wolf

5-AsnHisGlnSerAsnSerGlyGluGlyValLeu-15
 40-AsnGlnGlyLysValAsnThr-46
 54-AlaAspAlaHisThrProGluHisAlaThr-63
 65-LeuThrGluGlnLysGln-70
 92-IleLeuLysGlnGlyGlySerAlaAla-100
 114-GluProGlnSerSerGlyLeuGlyGly-122
 130-AspAsnThrAlaLysThr-135
 137-ThrThrPheAspGlyArgGluThrAlaPro-146
 154-PheLeuAspLysAspGlyGlnPro-161

Hydrophilic Regions - Hopp-Woods

8-SerAsnSerGlyGlu-12
 40-AsnGlnGlyLysValAsnThr-46
 55-AspAlaHisThrProGluHis-61
 65-LeuThrGluGlnLysGln-70
 96-GlyGlySerAlaAla-100
 139-PheAspGlyArgGluThrAlaPro-146
 154-PheLeuAspLysAspGlyGlnPro-161
a667

AMPHI Regions - AMPHI

49-IleAlaAspPheLeuGlnProAlaArgValGluArgLeuProHisLeuAlaAla-66
 74-LysThrAlaGlnPhe-78
 115-IleAlaAlaValAlaGluIle-121
 128-IleAlaArgGlyValAspAlaValGlnArg-137
 152-ThrAspGlnLeuArgArgMetPhePheAsnGlnLeuGluLysPheGlyAspAsnHis-170
 174-ValIleHisLeuAlaAspCysThrAsp-182
 201-LysMetMetLeuHisLysIleProThrArgLeu-211

Antigenic Index - Jameson-Wolf

11-IleValSerAspProLeuAsp-17
 27-SerAlaAlaAspGlnThrGluThrGln-35
 56-AlaArgValGluArgLeuPro-62
 71-LeuAlaArgLysThrAlaGln-77
 84-ArgHisIleArgProArgLeuValLysArgGluGlnIle-96
 130-ArgGlyValAspAlaValGln-136
 139-ValMetGlnAsnArgGlnValGlu-146
 151-ProThrAspGlnLeuArg-156
 163-LeuGluLysPheGlyAsp-168
 179-AspCysThrAspMet-183
 188-ProProThrHisAlaAlaArgAsnArgHisAsnLeu-199
 207-IleProThrArgLeu-211
 226-GlyGlnArgGlyArgGlnValIleGlnArgThrAspThrLeu-239
 247-IleGluSerGlnAsnArgGlyHisAspSer-256

Hydrophilic Regions - Hopp-Woods

11-IleValSerAspProLeu-16
 27-SerAlaAlaAspGlnThrGluThrGln-35
 56-AlaArgValGluArgLeuPro-62
 71-LeuAlaArgLysThrAlaGln-77

-565-

84-ArgHisIleArgProArgLeuValLysArgGluGlnIle-96
130-ArgGlyValAspAlaValGln-136
164-GluLysPheGlyAsp-168
191-HisAlaAlaArgAsnArgHisAsnLeu-199
227-GlnArgGlyArgGlnValIleGlnArgThrAspThr-238
249-SerGlnAsnArgGlyHisAsp-255
a669

AMPHI Regions - AMPHI

24-LysLeuHisArgAlaPhe-29
59-GlnIlePheArgHisValGlnSer-66
79-LysProProAsnThrAla-84

Antigenic Index - Jameson-Wolf

1-MetArgArgIleIleLysLysHisGlnProValAsn-12
33-GlyArgLysArgProHisHisHisAspArgSerLeuArgArgGlnHisGlyIle-50
64-ValGlnSerSerAsnArgGlnAsnGlyArgGlnProValCysThrLysProProAsnThrAlaSer-85
100-AlaAspIleLysArgIleLeu-106

Hydrophilic Regions - Hopp-Woods

1-MetArgArgIleIleLysLysHisGlnPro-10
33-GlyArgLysArgProHisHisHisAspArgSerLeuArgArgGlnHisGly-49
65-GlnSerSerAsnArgGlnAsnGlyArgGlnProValCysThrLysProProAsn-82
100-AlaAspIleLysArgIleLeu-106
a670

AMPHI Regions - AMPHI

10-ArgSerCysPheGly-14
16-ValLysAsnAlaSerGlyValSer-23
34-IleThrArgSerAla-38
77-ValGlySerSerAsnAsnIle-83
126-PheSerAlaCysSer-130

Antigenic Index - Jameson-Wolf

4-CysArgAsnCysLeuAlaArgSerCys-12
18-AsnAlaSerGlyValSerSerSerArgIleCysProLeuSer-31
33-LysIleThrArgSerAlaThrSerArgAlaAsnProIle-45
65-AsnThrSerProThrIleSerGlySerSerAlaGluValGlySerSerAsnAsnIleThrArgGlySerIleAlaLysProArgAlaIleAla-95
98-CysCysTrpProProGluSerTrpGluGlyLysAla-109
114-AlaSerProThrArgSerLysSerSer-122
145-AsnThrValArgCysGly-150

Hydrophilic Regions - Hopp-Woods

33-LysIleThrArgSerAlaThrSerArgAlaAsn-43
73-SerSerAlaGluValGlySer-79
87-SerIleAlaLysProArgAlaIleAla-95
116-ProThrArgSerLysSer-121
a671

AMPHI Regions - AMPHI

96-ThrProArgIleAla-100
119-ArgLeuPheIleArgTyr-124

Antigenic Index - Jameson-Wolf

-566-

11-PheAsnAlaProAsnThrProProLysMetArgLeuAlaLysProLysProThrAlaGluThrAlaProValSerSerGluArg-38
 45-GlnAlaMetThrAsnArgGluMetAsnAspArgAlaAsnAlaAsnArgArgGlyTrpAsnAspAlaLysAlaMetSerAlaLysGlyAlaAlaLysSerLeuAlaLysLysLysAlaThrThr-85
 98-ArgIleAlaAspSerThrMet-104
 110-AlaGluThrArgArgSerAlaThrGlyArgLeu-120
 125-LeuThrGlyAspThr-129

Hydrophilic Regions - Hopp-Woods

16-ThrProProLysMetArgLeuAlaLysProLysProThrAlaGlu-30
 32-AlaProValSerSerGluArg-38
 47-MetThrAsnArgGluMetAsnAspArgAlaAsnAlaAsnArgArgGlyTrpAsnAspAlaLysAlaMetSerAlaLysGlyAlaAlaLysSerLeuAlaLysLysLysAlaThrThr-85
 110-AlaGluThrArgArgSerAlaThr-117
a672

AMPHI Regions - AMPHI

38-ArgAlaValAspIleIleLysAlaGlnLys-47
 50-AlaAlaLeuProProPheValSerValVal-59
 67-AlaGlnAsnIleArgArgIleLeuAlaGluValPro-78
 91-AlaPheCysArgGlnPheHisArgProTyr-100
 105-ArgValGlnThrAlaSerAspIleArgAsnAlaAlaAspArgPhe-119
 131-HisProSerGluTyrGly-136
 165-AsnValAspGluAlaIle-170
 173-ThrGlyAlaGluAla-177

Antigenic Index - Jameson-Wolf

1-MetArgLysIleArgThrLysIleCysGlyIleThrThrProGluAspAlaLeu-18
 34-ProGlnSerProArgAlaValAspIleIleLysAlaGlnLys-47
 65-GluSerAlaGlnAsnIleArgArgIleLeuAla-75
 84-PheHisGlyAspGluAspAspAlaPhe-92
 107-GlnThrAlaSerAspIleArgAsnAlaAlaAspArgPheProAspAla-122
 130-TyrHisProSerGluTyrGlyGlyThrGlyHisArgPheAsp-143
 149-GluTyrSerGlyLysPro-154
 159-GlyGlyLeuThrProGluAsnValAspGluAlaIleArg-171
 176-GluAlaValAspValSerGlyGlyValGluAlaSerLysGlyLysLysAspProAlaLys-195
 202-ThrAlaAsnArgLeuSerArg-208

Hydrophilic Regions - Hopp-Woods

1-MetArgLysIleArgThrLysIle-8
 13-ThrProGluAspAlaLeu-18
 36-SerProArgAlaValAsp-41
 43-IleLysAlaGlnLys-47
 66-SerAlaGlnAsnIleArgArgIleLeuAla-75
 85-HisGlyAspGluAspAspAlaPhe-92
 110-SerAspIleArgAsnAlaAlaAspArgPheProAsp-121
 164-GluAsnValAspGluAlaIleArg-171
 184-ValGluAlaSerLysGlyLysLysAspProAlaLys-195
 204-AsnArgLeuSerArg-208
a673

AMPHI Regions - AMPHI

84-LeuAsnAspArgLeuAsnGlnAsnValThrGluAlaLeuGlyGlyValAspVal-101
 110-ArgPheThrAspAla-114
 117-ValValLeuLysGlnLeuProLys-124

-567-

172-ArgIleAlaAsnLeuLeuGluLeuIleLysProTyrLeu-184
 212-LysLeuPheArgTyrLeuGlyGluGlu-220
 261-GlyGluArgLeuLysLysIleSerThr-269
 275-MetGluLysLeuPhe-279
 285-LeuLysValTrpValLysValLys-292

Antigenic Index - Jameson-Wolf

7-LeuAlaGlyGluArgAlaAlaAspGlyTyrArg-17
 24-ValGlyArgProAsnValGlyLysSerThr-33
 44-SerIleThrSerLysLysAlaGlnThrThrArgAsnArgValThr-58
 61-TyrThrAspAspThrAla-66
 73-ThrProGlyPheGlnThrAspHisArgAsnAlaLeuAsnAspArgLeuAsnGlnAsnValThrGlu-94
 110-ArgPheThrAspAlaAspArgValVal-118
 121-GlnLeuProLysHisThr-126
 134-LysIleAspLysAspLysAlaLysAspArgTyrAla-145
 153-ValArgAlaGluPhe-157
 180-IleLysProTyrLeuProGluSerVal-188
 190-MetTyrProGluAspMetValThrAspLysSerAlaArg-202
 208-IleValArgGluLysLeuPhe-214
 217-LeuGlyGluGluLeuPro-222
 227-ValGluValGluGlnPheGluGluGluAspGlyLeuAsn-239
 247-ValAspLysGluSerGlnLys-253
 258-GlyLysGlyGlyGluArgLeuLysLysIleSerThrGluAlaArgLeuAspMetGluLysLeuPheAsp-280
 0
 291-ValLysSerGlyTrpAlaAspAspIleArgPheLeuArg-303

Hydrophilic Regions - Hopp-Woods

7-LeuAlaGlyGluArgAlaAlaAspGlyTyrArg-17
 45-IleThrSerLysLysAlaGlnThrThrArgAsnArgVal-57
 61-TyrThrAspAspThrAla-66
 78-ThrAspHisArgAsnAlaLeuAsnAspArgLeuAsn-89
 110-ArgPheThrAspAlaAspArgValVal-118
 134-LysIleAspLysAspLysAlaLysAspArgTyrAla-145
 153-ValArgAlaGluPhe-157
 194-AspMetValThrAspLysSerAlaArg-202
 208-IleValArgGluLysLeuPhe-214
 217-LeuGlyGluGluLeuPro-222
 227-ValGluValGluGlnPheGluGluGluAspGlyLeuAsn-239
 247-ValAspLysGluSerGlnLys-253
 259-LysGlyGlyGluArgLeuLysLysIleSerThrGluAlaArgLeuAspMetGluLysLeuPheAsp-280
 293-SerGlyTrpAlaAspAspIleArgPheLeuArg-303
a674

AMPHI Regions - AMPHI

16-ValTyrGlnSerLeuIle-21
 24-ThrAlaAlaProGluIleAlaLysAsnIleArgGluMetProAspPheAlaLys-41
 58-AlaAlaGluTyrIleArgGlnIleArgPro-67
 86-ThrAlaCysHisGluLeuSerAlaMetProGluThr-97
 107-IleGluValThrLysThrPheGlyGlyThrAspGlyHisLysPheValAsnGlyIleLeuAspLysLeuAla-130

Antigenic Index - Jameson-Wolf

1-MetLysThrAlaArgArgArgSerArgGluLeuAla-12
 28-GluIleAlaLysAsnIleArgGluMetProAspPheAlaLysAlaAspGluGluLeuPhe-47
 54-ThrGlnThrAsnAla-58

-568-

63-ArgGlnIleArgProLeuLeuAspArgAspGluLysAspLeuAsnProIleGluArg-81
 93-AlaMetProGluThrProTyr-99
 105-GluAlaIleGluValThrLysThrPheGlyGlyThrAspGlyHisLysPhe-121
 129-LeuAlaAlaGlnIleArgProAspGluProLysArgArg-141

Hydrophilic Regions - Hopp-Woods

1-MetLysThrAlaArgArgSerArgGluLeuAla-12
 28-GluIleAlaLysAsnIleArgGluMetProAspPheAlaLysAlaAspGluGluLeuPhe-47
 63-ArgGlnIleArgProLeuLeuAspArgAspGluLysAspLeuAsnProIleGluArg-81
 105-GluAlaIleGluVal-109
 133-IleArgProAspGluProLysArgArg-141
a675

AMPHI Regions - AMPHI

21-ArgPheThrAsnGluIleGlySerGluMetLeuLysValCysCysArgThrLeuGlnGluLeuGly-42
 74-AlaLeuIleAlaIle-78
 123-GlnAlaIleGluArgIleGluGluLysAlaSerAsp-134
 141-GluCysAlaAsnLeuValAsnLeuLeuLeuGlu-151

Antigenic Index - Jameson-Wolf

6-ProAsnLeuAspGlyLysHisLeuArg-14
 26-IleGlySerGluMetLeu-31
 42-GlyValAlaAspGluAsnIle-48
 68-SerSerGluLysPheAsp-73
 82-IleArgGlyGluThrTyr-87
 92-ValSerAsnGluSerGlyAlaGlyVal-100
 118-ThrGluAsnAspAlaGlnAlaIleGluArgIleGluGluLysAlaSerAspAlaAlaLysValAlaVal-140
 152-GluGlnPheGluAspGluGlu-158

Hydrophilic Regions - Hopp-Woods

8-LeuAspGlyLysHisLeuArg-14
 26-IleGlySerGluMetLeu-31
 42-GlyValAlaAspGluAsnIle-48
 68-SerSerGluLysPheAsp-73
 82-IleArgGlyGluThrTyr-87
 92-ValSerAsnGluSerGlyAlaGly-99
 118-ThrGluAsnAspAlaGlnAlaIleGluArgIleGluGluLysAlaSerAspAlaAlaLysValAlaVal-140
 152-GluGlnPheGluAspGluGlu-158
a677

AMPHI Regions - AMPHI

20-AlaArgLeuCysArgPheArgArg-27
 45-LeuThrProPheArgArgValAsnHisPheValAlaPheThrArgPheAsnGln-62
 78-IleAspPheIleAspAlaAsp-84
 86-PheAspGlyLeuLeuAla-91
 105-HisLeuValGlyArgPhe-110
 154-CysArgProValAspAspLeuAspAsp-162
 165-AlaPhePheIleAsnGlnLeuIleLysLeuValPheGlnCys-178

Antigenic Index - Jameson-Wolf

23-CysArgPheArgArgHisSerArgSerValAsp-33
 35-AspValPheAspArgLysAspPheAsn-43
 59-ArgPheAsnGlnThrThrSerGlnArgArgAsnProArgAsnPheVal-74

-569-

81-IleAspAlaAspAspPheAspGly-88
 96-GlnGlnThrAspGlyArgAlaGluLysHisLeu-106
 114-GlyIleAsnAspAspGlyGlyPhe-121
 124-LeuGlyGlnGluThrAspAlaAlaVal-132
 155-ArgProValAspAspLeuAspAspPheGly-164
 180-ProSerGlyGlyArgAsn-185

Hydrophilic Regions - Hopp-Woods

23-CysArgPheArgArgHisSerArgSerValAsp-33
 35-AspValPheAspArgLysAspPhe-42
 64-ThrSerGlnArgArgAsnProArg-71
 81-IleAspAlaAspAspPheAsp-87
 96-GlnGlnThrAspGlyArgAlaGluLysHisLeu-106
 115-IleAsnAspAspGlyGly-120
 125-GlyGlnGluThrAspAlaAlaVal-132
 155-ArgProValAspAspLeuAspAsp-162
a678

AMPHI Regions - AMPHI

10-LeuValSerAlaIleIle-15
 24-MetArgGlyValIle-28
 47-PheAlaAlaProPhe-51
 79-LeuIleGlnLysIleLeuArgSerLeuLeuThrGlyAla-91
 102-ArgIleLeuGlyGlyValPheGlyAlaLeuLysGlyIleLeu-115
 130-ProAspThrGluGlu-134

Antigenic Index - Jameson-Wolf

125-SerLysThrAspLeuProAspThrGluGluTrpArgGlnSerTyrThr-140
 154-HisSerGlyGlyThrAlaGluThrProGluAspAsp-165

Hydrophilic Regions - Hopp-Woods

125-SerLysThrAspLeuProAspThrGluGluTrpArgGln-137
 157-GlyThrAlaGluThrProGluAspAsp-165
a681

AMPHI Regions - AMPHI

12-PheSerGluGluAlaLysPheIleSerAlaMet-22
 102-LeuProValGlyAsp-106
 122-ArgLeuGlyGluGlnCys-127
 137-IleGlyGluAlaAspAspAlaGluValValArgValValGlyValPheValGly-154
 202-LysCysValHisCysGly-207
 210-XxxGlyGlyLysLeuAlaAspPheThrThrIle-220
 234-CysAlaProPheAlaAlaLeuArgCysPheCysIlePheGlyValTrpLysArgIleArgAlaValPheCys
 GlyArg-259

Antigenic Index - Jameson-Wolf

11-AsnPheSerGluGluAlaLysPhe-18
 39-AlaThrProAsnSerTrpArgValArgGlnGln-49
 59-LeuValLysArgAlaCys-64
 67-ProMetArgArgCysLeuProSerArgLeu-76
 89-GlyGlyPheGlyMetProSerGluGlySerVal-99
 103-ProValGlyAspGlyLeuGlu-109
 120-AlaPheArgLeuGlyGluGlnCysGlyGlyPhe-130
 136-AspIleGlyGluAlaAspAspAlaGluVal-145
 157-AlaAlaGluGluThrPro-162

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167-PheLysAsnGlyGly-171
173-AlaValGluGluAlaAspGly-179
185-AspGlyValGlyGlyAspAlaAlaValGluCysArgGlyLysCysLeuCys-201
207-GlyAsnThrXxxGlyGlyLysLeuAlaAsp-216
224-SerAlaAspGlyGlyGly-229
256-PheCysGlyArgArg-260

Hydrophilic Regions - Hopp-Woods

11-AsnPheSerGluGluAlaLysPhe-18
44-TrpArgValArgGln-48
59-LeuValLysArgAlaCys-64
67-ProMetArgArgCysLeuPro-73
95-SerGluGlySerVal-99
120-AlaPheArgLeuGlyGluGln-126
136-AspIleGlyGluAlaAspAlaGluVal-145
157-AlaAlaGluGluThrPro-162
173-AlaValGluGluAlaAspGly-179
191-AlaAlaValGluCysArgGlyLysCysLeu-200
210-XxxGlyGlyLysLeuAlaAsp-216
256-PheCysGlyArgArg-260
a682

AMPHI Regions - AMPHI

33-ArgLeuArgLysCysGlyArgIleLeuSerGlyIleCysGluProPhe-48

Antigenic Index - Jameson-Wolf

9-SerTyrGlyLysTrpArgLysAsnTrpAspIle-19
30-SerSerThrArgLeuArgLysCysGlyArg-39
95-ArgPheProThrAspArgProIleLeu-103
112-IleSerProArgThrGlyPheArgTyrProThrArgSerLeuProLysSerLysLysAlaTyrGly-133

Hydrophilic Regions - Hopp-Woods

12-LysTrpArgLysAsnTrpAsp-18
32-ThrArgLeuArgLysCysGlyArg-39
97-ProThrAspArgProIleLeu-103
124-SerLeuProLysSerLysLysAlaTyrGly-133
a683

AMPHI Regions - AMPHI

26-ThrProAspLysSerAlaArgTrpGluAsnIleGlyThrIleSerAsn-41
101-SerSerLeuGlnLeuPhe-106
124-ArgProMetSerIleLeuSerGly-131

Antigenic Index - Jameson-Wolf

24-CysSerThrProAspLysSerAlaArgTrpGluAsn-35
37-GlyThrIleSerAsnGly-42
48-IleAsnLysAspSerValArgLysAsnGlyAsn-58
63-XxxAspLysLysValValThrAsnLeuLysGlnGluArgPheAla-77
93-CysAsnAsnLysThrTyrArgLeu-100
106-PheAspThrLysAsnThrGluIleSerThr-115
119-ThrAlaSerSerLeuArgPro-125
131-GlyThrLeuThrGluLysGlnTyrGlu-139
141-ValCysGlyLysLysLeu-146

Hydrophilic Regions - Hopp-Woods

-571-

25-SerThrProAspLysSerAlaArgTrpGluAsn-35
 48-IleAsnLysAspSerValArgLysAsnGly-57
 63-XXXAspLysLysValValThr-69
 71-LeuLysGlnGluArgPheAla-77
 107-AspThrLysAsnThrGluIleSer-114
 133-LeuThrGluLysGlnTyrGlu-139
 141-ValCysGlyLysLysLeu-146
a684

AMPHI Regions - AMPHI

13-AlaAlaCysGlyThrValGln-19
 47-LeuAlaGluProLeu-51
 73-TrpAlaAspThrLeuAspAspMetLeuGluAlaAlaLeuSerAsnAlaPheAsnArgLeuAspSerThr-95
 110-TrpThrValTyrIleAspAlaPheGlnGlySerTyr-121
 154-AlaMetThrAlaAlaLeuGluGlnGlyLeuLysGlnAlaAlaGlnMetVal-171

Antigenic Index - Jameson-Wolf

26-LeuProAspSerArgTyrIleArgProAlaThrGlnGlyGlyGluThrAlaValGluValArgLeuAlaGluProLeuLysArgGlyGlyLeu-56
 60-ThrAspProTyrArgLeuAsnThrAlaGln-69
 76-ThrLeuAspAspMetLeuGlu-82
 90-AsnArgLeuAspSerThrArg-96
 101-AlaSerArgSerGlySerThrGluLys-109
 117-PheGlnGlySerTyrThrGlyLysThrLeu-126
 133-LeuProAspGlyThrAsnArgProPheHisIleGluThrGluGlnGlnGlyAspGlyTyrAla-153
 161-GlnGlyLeuLysGlnAlaAla-167

Hydrophilic Regions - Hopp-Woods

27-ProAspSerArgTyrIleArg-33
 35-AlaThrGlnGlyGlyGluThrAlaValGluValArgLeuAlaGluProLeuLysArgGlyGly-55
 76-ThrLeuAspAspMetLeuGlu-82
 90-AsnArgLeuAspSer-94
 102-SerArgSerGlySerThrGluLys-109
 141-PheHisIleGluThrGluGlnGlnGlyAsp-150
 161-GlnGlyLeuLysGlnAlaAla-167
a685

AMPHI Regions - AMPHI

7-AsnPheAlaPheCysGlyValVal-14
 44-CysAlaValLeuLeu-48
 94-TrpAlaAlaLeuAspThrLeuThrGluLeu-103
 137-TyrGluAlaLeuHisArgTyr-143
 154-GlyAlaGluAlaTyrGluGlnLeuAlaLysAsn-164
 182-GluLysGlnMetGluThrLeuAlaArgIlePheGlyLysGlu-195
 206-AspAlaLeuPheAla-210
 296-AlaValGluValLeuAspAsnAlaLeuVal-305
 336-AlaAlaGluGlnLeuLysGluAlaPhe-344

Antigenic Index - Jameson-Wolf

20-LeuAsnAsnLysHisSerTyrSerTyrAlaLysGluProHisThrValLysProArgPhe-39
 52-SerProGluProAlaAlaGluLysThrValSer-62
 74-ProThrAlaArgGlyAspAlaValValProLysAsnProGluArgValAla-90
 122-AlaPheAspLysAlaAla-127
 133-PheGluProAspTyrGluAlaLeuHisArgTyrAsn-144
 151-GlyGlyProGlyAlaGluAlaTyrGluGlnLeuAlaLysAsnAlaThr-166

-572-

170-LeuThrValAspAsnGlyAsnIleArgThrSerGlyGluLysGlnMetGluThrLeu-188
 192-PheGlyLysGluAlaArgAlaAlaGluLeuLysAlaGlnIle-205
 211-GlnThrArgGluAlaAlaLysGlyLysGlyArgGlyLeu-223
 227-ValThrGlyAsnLysValSerAlaPheGlyThrGlnSerArgLeu-241
 247-GlyAspIleGlyLeuProProValAspGluSerLeuArgAsnGluGlyHisGlyGln-265
 271-TyrIleLysGluLysAsnProAspTrpIle-280
 285-ArgThrAlaAlaIleGlyGlnGluGlyProAla-295
 307-GlyThrAsnAlaTrpLysArgLysGln-315
 328-GlyGlySerArgGlnLeu-333
 338-GluGlnLeuLysGluAlaPheGluLysAlaGluPro-349
 351-AlaAlaGlyLysGlu-355

Hydrophilic Regions - Hopp-Woods

28-TyrAlaLysGluProHisThrValLys-36
 52-SerProGluProAlaAlaGluLysThrValSer-62
 75-ThrAlaArgGlyAspAlaValVal-82
 84-LysAsnProGluArgValAla-90
 122-AlaPheAspLysAlaAla-127
 135-ProAspTyrGluAla-139
 156-GluAlaTyrGluGlnLeuAlaLys-163
 175-GlyAsnIleArgThrSerGlyGluLysGlnMetGluThrLeu-188
 192-PheGlyLysGluAlaArgAlaAlaGluLeuLysAlaGlnIle-205
 211-GlnThrArgGluAlaAlaLysGlyLysGlyArgGly-222
 253-ProValAspGluSerLeuArgAsnGluGlyHisGly-264
 271-TyrIleLysGluLysAsnPro-277
 290-GlyGlnGluGlyProAla-295
 309-AsnAlaTrpLysArgLysGln-315
 338-GluGlnLeuLysGluAlaPheGluLysAlaGluPro-349
 351-AlaAlaGlyLysGlu-355
a686

AMPHI Regions - AMPHI

10-AspValPheAspAspIleCysSerAlaValGluSerPheGlyGlyIleAlaArgSerValGlnLeu-31
 50-ThrThrGlyIleValGluThrValAspLysProLeu-61
 70-ValGluAlaAspIle-74
 86-IleProArgAlaPheGlySerGlyIleAlaAlaAlaLeu-98

Antigenic Index - Jameson-Wolf

1-TerTerAsnPheSerCysArgAlaAspAspValPheAsp-13
 46-LeuArgGlnHisThrThrGlyIle-53
 55-GluThrValAspLysProLeuSerGlyAla-64
 70-ValGluAlaAspIle-74
 115-AspAlaValLysAlaGluSerValAsnGlyThrThrGly-127

Hydrophilic Regions - Hopp-Woods

6-CysArgAlaAspAspValPheAsp-13
 55-GluThrValAspLysProLeuSer-62
 70-ValGluAlaAspIle-74
 115-AspAlaValLysAlaGluSerValAsn-123
a687

AMPHI Regions - AMPHI

11-AlaAlaLeuPheAlaLeu-16
 64-LysValGluValLeuGluPhePheGlyTyrPheCysPro-76
 78-CysAlaHisLeuGluProValLeuSerLysHisAlaLysSerPhe-92

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112-LeuAlaArgLeuAlaAlaAla-118
 135-PheAspAlaMetVal-139
 148-ProGluValLeuLysLysTrpLeu-155
 176-GlnAlaArgAlaAspLysMetGlnGluLeuThrGluThrPhe-189

Antigenic Index - Jameson-Wolf

1-MetLysSerLysHis-5
 19-CysAspSerLysValGlnThrSerValProAlaAspSerAlaPro-33
 43-GlyLeuValGluGlyGlnAsnTyr-50
 56-ProIleProGlnGlnGlnAlaGlyLysValGluVal-67
 87-LysHisAlaLysSerPheLysAspAspMetTyrLeu-98
 122-AlaAlaAlaAspSerLysAspValAlaAsn-131
 141-GlnLysIleLysLeuGlnGluProGluValLeuLys-152
 159-ThrAlaPheAspGlyLysLysVal-166
 171-GluSerProGluSerGlnAlaArgAlaAspLysMetGlnGluLeuThrGlu-187
 189-PheGlnIleAspGlyThrPro-195
 199-ValGlyGlyLysTyrLysValGluPheAlaAsp-209
 211-GluSerGlyMetAsnThr-216
 220-LeuAlaAspLysValArgGluGluGlnLysAlaAlaHis-232

Hydrophilic Regions - Hopp-Woods

1-MetLysSerLysHis-5
 19-CysAspSerLysValGlnThr-25
 27-ValProAlaAspSerAlaPro-33
 61-GlnAlaGlyLysValGluVal-67
 87-LysHisAlaLysSerPheLysAspAspMetTyrLeu-98
 122-AlaAlaAlaAspSerLysAspValAla-130
 141-GlnLysIleLysLeuGlnGluProGluValLeuLys-152
 159-ThrAlaPheAspGlyLysLysVal-166
 171-GluSerProGluSerGlnAlaArgAlaAspLysMetGlnGluLeuThrGlu-187
 201-GlyLysTyrLysValGluPheAlaAsp-209
 220-LeuAlaAspLysValArgGluGluGlnLysAlaAlaHis-232
a688

AMPHI Regions - AMPHI

23-LeuSerAlaLeuLeuGlyLeu-29
 120-GlyAsnAlaLeuGlnAsnAlaAla-127

Antigenic Index - Jameson-Wolf

4-TyrProSerArgPheAlaGln-10
 13-IleSerValAsnLys-17
 47-IleIleGlnGlyAsnGluLeuGluProArgAla-57
 61-LeuArgProGlyMetThrLysAspGln-69
 82-AlaPheHisThrAspArgTrpAspTyr-90
 93-AsnThrSerArgAsnGlyIleIleLysAspArgSerAsn-105
 116-ValArgThrGluGlyAsnAla-122
 125-AsnAlaAlaGluAlaLeuArgValLysGlnAsnAlaAspLysGln-139

Hydrophilic Regions - Hopp-Woods

51-AsnGluLeuGluProArgAla-57
 64-GlyMetThrLysAspGln-69
 98-GlyIleIleLysAspArgSerAsn-105
 116-ValArgThrGluGlyAsnAla-122
 125-AsnAlaAlaGluAlaLeuArgValLysGlnAsnAlaAspLysGln-139
a689

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AMPHI Regions - AMPHI

55-TyrProGluMetSerGluLysLeuMet-63
 65-ValLeuMetAlaMetLeuValThrLeu-73
 82-LeuProAlaIleProGluMetAlaGln-90
 111-AlaPheGlyGlnValValGlyGly-118
 123-IleLysGlyArgLys-127
 154-LeuAsnLeuArgValValGlnAlaPheGlyAlaGly-165
 188-PheAlaLeuIleGlyIleIleLeu-195
 203-ProMetValGlyAlaLeuLeuGlnGlyLeuGlyGlyTrpGlnAlaIlePheVal-220
 230-LeuGlyLeuValGlnTyrPhe-236
 245-LysIleGlyArgAspVal-250
 257-ArgPheLysArgValLeu-262
 277-SerPheGlySerMetPheAla-283
 314-MetMetPhePheAsnArgIleThr-321
 344-AlaAlaAsnLeuSerGlnLeuAlaAlaValLeuPhe-355
 400-ValLeuGlyValPheGlnSerLeuIleGly-409

Antigenic Index - Jameson-Wolf

36-PheArgArgArgAlaVal-41
 45-IleGlyArgGluPheMetProSer-52
 57-GluMetSerGluLysLeu-62
 95-AspValHisArgIleGluGln-101
 119-SerValSerAspIleLysGlyArgLysProVal-129
 174-MetValArgAspTyrTyrSerGlyArgLysAlaAla-185
 238-ProLysProAlaValGlyGlyLysIleGlyArgAspValPhe-251
 257-ArgPheLysArgValLeuLysThrArgAla-266
 325-LeuLysThrGlyValHis-330
 390-PheLysGluGluGlyGlySer-396
 448-ArgAlaTrpLysGluAsnGlyGlnSerGluTyrLeu-459

Hydrophilic Regions - Hopp-Woods

36-PheArgArgArgAlaVal-41
 45-IleGlyArgGluPheMet-50
 57-GluMetSerGluLysLeu-62
 95-AspValHisArgIleGluGln-101
 119-SerValSerAspIleLysGlyArgLysProVal-129
 178-TyrTyrSerGlyArgLysAlaAla-185
 245-LysIleGlyArgAspVal-250
 257-ArgPheLysArgValLeuLysThrArgAla-266
 390-PheLysGluGluGlyGlySer-396
 448-ArgAlaTrpLysGluAsnGlyGln-455
a690

AMPHI Regions - AMPHI

36-AlaSerSerThrAlaSerAla-42
 57-SerAlaProAspAsnValLysGlnAlaGlu-66
 68-ValProProSerAsnCysThrAspLeuHisProAlaThrGlyIleAspAspLeuMetGlnGlnIleAlaGluHisIle-93
 116-GlyTyrAspAsnIleGlnArgLeu-123
 151-ArgThrIleSerArgGlnAlaGlnAspAla-160
 189-ProLysArgThrArgTyrPhe-195
 213-GlyAsnPheGlnTyrIleGlyGlnLeuProGlyTyrLeuLys-226

Antigenic Index - Jameson-Wolf

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1-MetLysAsnLysThrSer-6
 21-SerProSerLysGluAspLysThrLysGluAsnGlyAla-33
 43-AlaSerSerSerAlaProGlnThrAspLeu-52
 57-SerAlaProAspAsnValLysGlnAlaGluSerValProProSerAsnCysThrAspLeuHisProAlaThrGlyIleAspAspLeuMet-86
 91-GluHisIleAspSerAspCys-97
 104-HisGluLeuGluThrArgPhe-110
 112-LeuProGlyGlyGlyTyrAspAsnIleGln-121
 126-ProAspIleArgProGluAspProAspTyrHisGln-137
 144-GluAspLeuArgTyrGlyLysArgThrIleSerArgGlnAlaGln-158
 160-AlaLeuMetGluGlnGluArgArgLeuArgGlu-170
 177-GlnGlySerGlnGluThrArgGlyGlnGlyGluGluProLysArgThrArgTyr-194
 198-SerAlaThrProAlaTyrSerSerArgHisAsnAsnGlyLeuGlyGlyAsn-214
 228-HisGlyGluMetLeuGluAsnGlnSerLeu-237
 239-ArgLeuSerAsnArgGluArgAsnProAspLysProPheLeu-252
 255-HisPheAspGluAsnGlyLysIleThr-263
 267-ValTyrGluLysAsnIleTyrPheAsnProAsnLeuGlyArgArg-281

Hydrophilic Regions - Hopp-Woods

1-MetLysAsnLysThr-5
 21-SerProSerLysGluAspLysThrLysGluAsnGlyAla-33
 46-SerAlaProGlnThrAspLeu-52
 57-SerAlaProAspAsnValLysGlnAlaGluSerValPro-69
 81-GlyIleAspAspLeuMet-86
 91-GluHisIleAspSer-95
 104-HisGluLeuGluThr-108
 128-IleArgProGluAspProAspTyrHis-136
 144-GluAspLeuArgTyrGlyLysArgThrIleSerArgGlnAlaGln-158
 160-AlaLeuMetGluGlnGluArgArgLeuArgGlu-170
 178-GlySerGlnGluThrArgGlyGlnGlyGluGluProLysArgThrArgTyr-194
 203-TyrSerSerArgHisAsnAsn-209
 228-HisGlyGluMetLeuGlu-233
 240-LeuSerAsnArgGluArgAsnProAspLysProPhe-251
 255-HisPheAspGluAsnGlyLysIleThr-263
a691

AMPHI Regions - AMPHI

11-LysProAlaAlaSer-15
 55-HisAsnGluLeuArgLysIleArgAla-63
 108-ArgTyrLeuSerGly-112

Antigenic Index - Jameson-Wolf

7-CysArgPheAlaLys-11
 36-LeuAsnAspPheGlnProAsnCysAspIleArgArgLeuGlyLeuThrGlnGlyGlnHisAsnGluLeuArgLysIleArgAla-63
 67-MetAlaGlyAspArgAlaArgLeuLysValMetHis-78
 80-GluHisSerArgArgArgSerVal-87
 91-IleSerSerAspValPheAsnArgAsnGluAlaArgAspTyrValGluSerArgTyrLeuSerGlyMetAspPheAlaValAspGluLeuGluIle-122
 131-ThrProGlnGlnGlnGln-136
 140-SerSerCysLeuLys-144

Hydrophilic Regions - Hopp-Woods

43-CysAspIleArgArgLeuGly-49
 54-GlnHisAsnGluLeuArgLysIleArgAla-63

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67-MetAlaGlyAspArgAlaArgLeuLysValMetHis-78
 80-GluHisSerArgArgArgSerVal-87
 95-ValPheAsnArgAsnGluAlaArgAspTyrValGlu-106
 115-PheAlaValAspGluLeuGluIle-122
a692

AMPHI Regions - AMPHI

6-CysArgCysSerGluSerIleArgArgIleArgArgAsn-18
 77-LeuGlyTyrValPheLysProLeuAlaValPheVal-88
 106-GlnGlyPheGlyGlnLeuHis-112
 132-ThrArgGlnLeuArgGlyPheLys-139
 143-PheAspValPheGlnValPheGlyAsn-151
 170-GlnPheValGluHisHis-175
 177-AspAlaGlyGluValGlyArgValValGlyArgGlyTyrGlyAlaAlaValPheAspPhePheGlnArgPhe
 GlnLeu-202
 205-ValGlnSerGlnArgArgGlyArgHisLeuGluAspPheGlyAsp-219
 254-ValGlyLysLeuAspGlnPheAspGlyVal-263
 275-PheAspHisIleAlaGluValAlaAsp-283

Antigenic Index - Jameson-Wolf

6-CysArgCysSerGluSerIleArgArgIleArgArgAsnGlyArgGluTrpArgIleLysGlyGlnLysCysArg
 GLeuAsnThrAspThrValGln-37
 89-GlyGlyPheAspGlyArgProValAspIleGlyLysAlaArgPheLeu-104
 120-AlaValAspAspGlyLysIle-126
 131-AlaThrArgGlnLeuArgGlyPheLysLeuAspAspPheAspVal-145
 153-ArgPheGlyCysGlyGlnArgIleAspAla-162
 174-HisHisGlnAspAlaGlyGluValGlyArgValValGlyArgGlyTyr-189
 204-ArgValGlnSerGlnArgArgGlyArgHisLeuGluAspPheGlyAsp-219
 236-GluAspValAspVal-240
 255-GlyLysLeuAspGlnPheAspGly-262
 279-AlaGluValAlaAspGlyArgAlaGluAspAspPhePhePhe-292
 295-AlaValValGlyGlyGlyArgSerGlyCysGlyGlyArg-307
 313-AlaAlaGlyGlyGluAspGluArgGluCysGlyGlyGlyLysGlyPheGluGlu-330

Hydrophilic Regions - Hopp-Woods

7-ArgCysSerGluSerIleArgArgIleArgArgAsnGlyArgGluTrpArgIleLysGlyGlnLysCysArgLe
 uAsnThr-33
 91-PheAspGlyArgProValAspIleGlyLys-100
 120-AlaValAspAspGlyLysIle-126
 131-AlaThrArgGlnLeuArgGlyPheLysLeuAspAspPheAsp-144
 174-HisHisGlnAspAlaGlyGluValGlyArgValValGly-186
 206-GlnSerGlnArgArgGlyArgHisLeuGluAspPheGlyAsp-219
 236-GluAspValAspVal-240
 255-GlyLysLeuAspGlnPheAsp-261
 279-AlaGluValAlaAspGlyArgAlaGluAspAspPhePhePhe-292
 299-GlyGlyArgSerGlyCysGly-305
 315-GlyGlyGluAspGluArgGluCysGlyGly-324
 326-LysGlyPheGluGlu-330
a694

AMPHI Regions - AMPHI

82-ArgGlyArgAlaCysArg-87
 116-CysArgHisPheAlaGln-121
 123-ValAlaValGlyArgIleGly-129
 140-PheCysGlnLeuPheAsp-145

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156-AspIlePheLeuVal-160
 162-IleAlaAspIleGlyGlu-167
 184-ArgGlyLeuAlaAspIleGlyGluPheValGlyValSerAsp-197
 251-HisGlnArgAlaSerArgIleLys-258
 283-ArgAlaArgArgHisPheArgGlnValPheAsn-293
 311-AspPheValAlaHisIle-316
 340-AlaAlaArgIleGly-344

Antigenic Index - Jameson-Wolf

3-SerAlaSerGlyThrArgGlnLysCysArgLeuLysProVal-16
 23-ProLysHisSerThrProAlaSer-30
 47-GlyGlnAspGluHisAsnAla-53
 66-ProProSerAlaTyrGly-71
 79-HisPheGlyArgGlyArgAlaCysArgTyr-88
 110-ArgIleAspSerAlaArgCysArgHis-118
 127-ArgIleGlyArgThrAspHisAsnHisAsp-136
 144-PheAspGlyGlyLeuProValGlyArgArgIleAla-155
 163-AlaAspIleGlyGluThrArgValGlnArgGlyAspValPhe-177
 180-IleAspArgGluArgGlyLeuAlaAsp-188
 202-HisIleSerAspArgPheAspGlnLysHisPheAlaArgArgLysLeuProHisArgSerPheAspLeu-224
 228-LeuMetProAspHisAspAspPheThr-236
 250-ArgHisGlnArgAlaSerArgIleLysHisAlaGluThrAlaLeu-264
 268-LeuProHisArgLeuArgTyrAla-275
 280-AsnGlnCysArgAlaArgArgHisPhe-288
 291-ValPheAsnLysHisArgThr-297
 316-IleAsnArgArgAlaGluLeu-322
 326-ThrPheAspAsnThrAspCysPro-333
 336-ThrSerAlaGluAlaAlaArgIleGlyLysAspAspGlyPhe-349
 370-TyrGlyGlyArgCysCysProThrProProThrProHisArgArgArg-385

Hydrophilic Regions - Hopp-Woods

5-SerGlyThrArgGlnLysCysArgLeuLysPro-15
 47-GlyGlnAspGluHisAsnAla-53
 81-GlyArgGlyArgAlaCysArg-87
 110-ArgIleAspSerAlaArgCysArgHis-118
 127-ArgIleGlyArgThrAspHisAsnHis-135
 150-ValGlyArgArgIleAla-155
 163-AlaAspIleGlyGluThrArgValGlnArgGlyAspAsp-175
 180-IleAspArgGluArgGlyLeuAlaAsp-188
 202-HisIleSerAspArgPheAspGlnLysHisPheAlaArgArgLysLeuProHisArgSerPheAspLeu-224
 230-ProAspHisAspAsp-234
 250-ArgHisGlnArgAlaSerArgIleLysHisAlaGluThrAlaLeu-264
 280-AsnGlnCysArgAlaArgArgHisPhe-288
 292-PheAsnLysHisArg-296
 316-IleAsnArgArgAlaGluLeu-322
 327-PheAspAsnThrAsp-331
 338-AlaGluAlaAlaArgIleGlyLysAspAspGly-348
 380-ThrProHisArgArgArg-385

a695**AMPHI Regions - AMPHI**

36-HisProGlnArgPheSerLysProAlaGluArgTyrAlaAspCysProHis-52
 85-CysSerSerProValSerArgAsn-92

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119-AspArgLeuAspTyr-123
 129-ValArgLeuSerAsnGluValGlu-136
 144-AlaLeuGluHisAla-148
 158-ValGlnLysLeuAsp-162
 183-ValGluThrAlaGlnAsnLeuTyrAsnGlnAlaLeuLysHisTyrLysSerGly-200
 205-AlaAlaSerLeuLeuLysGlyAla-212
 238-CysGluSerValIleGluIle-244
 248-TyrAlaAsnArgPheLysAspSer-255
 278-AlaArgAlaThrTrpArgSerLeuIleGlnThrTyrProGly-291

Antigenic Index - Jameson-Wolf

5-CysProAlaArgArgHisHisCysHis-13
 17-PheValGluArgLysGlyAspAlaArgSerGlyPhe-28
 31-AlaAlaGlnArgArgHisProGlnArgPheSerLysProAlaGluArgTyrAlaAspCysProHisHisProAlaArgArgArgPheAspProAlaSerGluLysIleMetLysThrLys-71
 87-SerProValSerArgAsnIleGlnAspMetArgLeuGluProGlnAlaGluAlaGlySerSerAspAlaIleProTyr-112
 117-LeuGlnAspArgLeuAspTyr-123
 131-LeuSerAsnGluValGluThrLeuAsnGlyLysValLysAlaLeuGluHisAlaLysThrHisProSerSerArgAlaTyrValGlnLysLeuAspAspArgLysLeuLysGlu-168
 170-TyrLeuAsnThrGluGlyGlySerAla-178
 193-AlaLeuLysHisTyrLysSerGlyArgPhe-202
 210-LysGlyAlaAspGlyGlyAspGlyGlySerIleAlaGln-222
 230-GlnSerArgAlaArgMetGlyAsnCys-238
 244-IleGlyGlyArgTyrAlaAsnArgPheLysAspSerProThrAlaPro-259
 266-GlyGluCysGlnTyr-270
 272-LeuGlnGlnLysAspIleAla-278
 289-TyrProGlySerProAlaAlaLysArgAlaAlaAlaValArgLysArg-305

Hydrophilic Regions - Hopp-Woods

5-CysProAlaArgArgHisHisCys-12
 17-PheValGluArgLysGlyAspAlaArgSerGlyPhe-28
 31-AlaAlaGlnArgArgHisProGlnArgPheSerLysProAlaGluArgTyrAlaAsp-49
 51-ProHisHisProAlaArgArgArgPheAspProAlaSerGluLysIleMetLysThrLys71
 88-ProValSerArgAsnIleGlnAspMetArgLeuGluProGlnAlaGluAlaGlySerSerAsp-108
 117-LeuGlnAspArgLeuAspTyr-123
 131-LeuSerAsnGluValGluThrLeuAsnGlyLysValLysAlaLeuGluHisAlaLysThrHisProSerSer-154
 157-TyrValGlnLysLeuAspAspArgLysLeuLysGlu-168
 195-LysHisTyrLysSerGlyArgPhe-202
 210-LysGlyAlaAspGlyGlyAspGlyGlySerIleAlaGln-222
 231-SerArgAlaArgMetGlyAsn-237
 248-TyrAlaAsnArgPheLysAspSerProThrAlaPro-259
 266-GlyGluCysGlnTyr-270
 272-LeuGlnGlnLysAspIleAla-278
 293-ProAlaAlaLysArgAlaAlaAlaValArgLysArg-305
a696

AMPHI Regions - AMPHI

18-PheGlyGlyIlePheHisPheValCysArgPheLeuSerArgValGlySerPheValGlnSerIlePheSerCysPheSer-44
 65-IlePheAspLeuValPhe-70
 94-GlyLeuAsnArgPheLeuAsnLeuLeuPheGlyPheLeuArg-107

Antigenic Index - Jameson-Wolf

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12-CysGlnGlyAsnLysLeu-17
73-PheAspGlyArgSerGlyArgLeuGlyGlyArgSerArgSer-86
108-ThrSerCysGlnGlySerArgHisHisCysGlyAsnGln-120

Hydrophilic Regions - Hopp-Woods

73-PheAspGlyArgSerGlyArgLeuGlyGlyArgSerArgSer-86
109-SerCysGlnGlySerArgHisHisCys-117
a700

AMPHI Regions - AMPHI

6-ThrLeuLeuSerValLeuIleProMetPheAlaGlyPhePheIleArgValProLys-24
27-LeuProAlaLeuAspLysValLeuSerValLeu-37
51-ArgValGluAspLeuGlySerArg-58
80-AlaLeuAlaValLeuGlyLysLeu-87
191-SerTrpValLysGlyLeu-196
204-TrpTyrSerLeuSerGlyLeuVal-211
216-TyrGlyAlaValTrpGlySerIleAlaLeuLeuAsnAspLeuAlaArgGluLeu-233
267-ArgGlyAlaGlyGlyLeu-272

Antigenic Index - Jameson-Wolf

21-ArgValProLysProTyrLeu-27
50-SerArgValGluAspLeuGlySerArgLeuAspAspMetAla-63
90-TrpArgIleLysGlyLysGlyLysGlyVal-99
118-AlaSerGlyLysLeuMetArg-124
128-MetProSerGluAsnAlaGlyMet-135
149-LeuLysSerSerGlyValSerLeu-156
160-LeuValAsnArgArgGlyIleArgLeu-168
245-ArgPheProAspAla-249
268-GlyAlaGlyGlyLeuGluAla-274

Hydrophilic Regions - Hopp-Woods

50-SerArgValGluAspLeuGlySerArgLeuAspAspMetAla-63
92-IleLysGlyLysGlyLysGlyVal-99
149-LeuLysSerSerGlyValSer-155
160-LeuValAsnArgArgGlyIleArg-167
a701

AMPHI Regions - AMPHI

6-PheGlnValAlaGly-10
45-ProAsnSerPheAlaSerPheLysArgPheSerSerIle-57

Antigenic Index - Jameson-Wolf

18-GlnSerThrProSerSerProThr-25
33-ThrSerProGluAlaGly-38
52LysArgPheSerSerIleSer-58
72-GlyLysAlaAspIleProThr-78
105-LysAlaSerLeuAsnAsnArgAlaThrSerSer-115
119-SerGlySerGlyThrArgLeu-125

Hydrophilic Regions - Hopp-Woods

72-GlyLysAlaAspIle-76
107-SerLeuAsnAsnArgAlaThrSer-114
a702

AMPHI Regions - AMPHI

-580-

51-CysSerGlyLeuValThrVal-57
 118-LysIleSerArgGly-122

Antigenic Index - Jameson-Wolf

1-MetProCysSerLysAlaSer-7
 28-LeuAlaArgAspSerCysSerProGlyLeu-37
 41-ThrAlaProAlaSerSer-46
 68-LeuAlaIleArgArgMetAlaSerArgProThrGlyValArgArgValIleSer-85
 88-GlyMetProProSerThrArgAlaTrpAspLysSerMetAla-101
 118-LysIleSerArgGlyValSer-124
 139-ArgTrpAspArgLeu-143

Hydrophilic Regions - Hopp-Woods

29-AlaArgAspSerCysSer-34
 69-AlaIleArgArgMetAlaSerArgProThrGlyValArgArgValIleSer-85
 94-ArgAlaTrpAspLys-98
 139-ArgTrpAspArgLeu-143
a703

AMPHI Regions - AMPHI

21-GlnThrLeuAlaThrValAsnGly-28
 64-GluValValAsnThrValValAlaGlnGlu-73
 79-LeuAspArgSerAlaGlu-84
 140-AlaAlaTyrAspAsnIleSerGlyPheTyrLysGly-151
 181-PheAspAlaValLeu-185
 204-ValProLeuLysAspLeuGluGlnGlyValProProLeuTyrGlnAlaIleLysAspLeuLysLys-225
 252-ValProSerPheAsp-256
 270-ArgIleAspArgAlaValGlyAlaLeu-278

Antigenic Index - Jameson-Wolf

1-MetLysAlaLysIle-5
 26-ValAsnGlyGlnLysIleAspSerSerVal-35
 43-PheArgAlaGluAsnSerArgAlaGluAspThrProGlnLeuArg-57
 72-GlnGluValLysArgLeuLysLeuAspArgSerAlaGluPheLysAsnAlaLeuAlaLysLeuArgAlaGluAlaLysLysSerGlyAspAspLysLysProSerPheLysThr-109
 129-LysThrGlnProValSerGluGlnGluValLysAlaAlaTyr-142
 144-AsnIleSerGlyPheTyrLysGlyThrGlnGluValGlnLeu-157
 160-IleLeuThrAspLysGluGluAsnAlaLysLysAlaValAlaAspLeuLysAlaLysLysGlyPhe-181
 188-TyrSerLeuAsnAspArgThrLysGlnThrGlyAlaProValGly-202
 207-LysAspLeuGluGlnGlyValProPro-215
 221-LysAspLeuLysLysGlyGluPheThrAlaThrProLeuLysAsnGlyAspPhe-238
 243-TyrValAsnAspSerArgGluValLysValProSerPheAspGluMetLysGly-260
 266-LeuGlnAlaGluArgIleAspArgAlaVal-275
 282-AlaAsnIleLysProAlaLys-288

Hydrophilic Regions - Hopp-Woods

1-MetLysAlaLysIle-5
 29-GlnLysIleAspSerSerVal-35
 43-PheArgAlaGluAsnSerArgAlaGluAspThrProGlnLeuArg-57
 72-GlnGluValLysArgLeuLysLeuAspArgSerAlaGluPheLysAsnAlaLeuAlaLysLeuArgAlaGluAlaLysLysSerGlyAspAspLysLysProSerPhe-107
 131-GlnProValSerGluGlnGluValLysAlaAlaTyr-142
 160-IleLeuThrAspLysGluGluAsnAlaLysLysAlaValAlaAspLeuLysAlaLysLysGlyPhe-181
 189-SerLeuAsnAspArgThrLysGlnThrGly-198
 207-LysAspLeuGluGln-211

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221-LysAspLeuLysLysGlyGluPhe-228
 245-AsnAspSerArgGluValLysValProSerPheAspGluMetLysGly-260
 266-LeuGlnAlaGluArgIleAspArgAlaVal-275
 282-AlaAsnIleLysProAlaLys-288
a704

AMPHI Regions - AMPHI

33-GlyCysGlnAlaValAlaGlnSerIleIleAspAlaGlyLeuGly-47
 65-GlnGluIleLeuAspGlnIleArgLeuTyrAspLeuProGluValGlnSerAspPheValGluThrHis-87
 184-LeuGlyMetMetGln-188
 208-LeuGlnIleLeuHisTrpGlyGlyPheLeuMetValLeuPro-221
 232-GlnGlyAlaLeuArgAspLeuLys-239
 252-AlaIleIleMetThrPheIleAlaGlyValTyrSer-263
 289-PheMetGluHisIleAlaArg-295
 298-AlaGlyAspAlaAlaGluArgLeuValLysLeuIleProAlaPheCysHisHisMetProAspTyrProAsp
 ThrGlnGluThr-325
 400-GlyGlyThrArgLeuSerHisIleValArgLeuLeuAspArgAlaLeuAla-416
 423-GluLeuAlaGluGlnTyr-428
 499-AlaIleGluThrLeuAlaGln-505
 527-IleSerLeuLeuArg-531
 576-LeuAsnArgIleGlyGluGlyValGly-584
 639-LeuLysAspSerAlaAlaGluAlaValArgGlnLeuAla-651
 670-GluThrAlaArgAlaLeuGlyVal-677
 691-GluTyrValLysAlaLeuGlnLysGlu-699
 744-AspLeuArgThrValAlaHisLeuLeuAsp-753
 780-AlaValLeuGlyTyrValGlnProTrpIleAlaAla-791
 799-LeuAlaValLeuGly-803
 805-AlaLeuArgLeuHisLysArg-811

Antigenic Index - Jameson-Wolf

1-MetLysLysThrCys-5
 9-GlyLeuAspValProGluAsn-15
 21-ArgTyrGluAsnGluAspArgGluThrCysCys-31
 46-LeuGlySerTyrTyrLysGlnArgThrAlaAspAlaGlnLysThrGluLeuProProGlnGluIleLeuAsp-
 69
 77-ProGluValGlnSerAspPheValGluThrHisGlyGlyThrArgGluAla-93
 112-GlnLeuLeuArgThrAspGlyIleVal-120
 124-LeuAsnTyrSerThrHisArgCys-131
 133-ValValTrpAspAspGlyLysIleArgLeu-142
 158-ProTyrAspAlaGlnLysIleGluAlaAlaAsnGlnLysGluArgLysGlnTyr-175
 199-TyrGlyGlyAspIleGluProAspPhe-207
 234-AlaLeuArgAspLeuLysAsnArgArgValGlyMetAspThrProIle-249
 293-IleAlaArgArgLysAlaGlyAspAlaAlaGluArgLeuVal-306
 316-MetProAspTyrProAspThrGlnGluThrCysGlu-327
 329-AlaValValLysLeuLysAlaGlyAsp-337
 342-LysProGlyGluThrIleProValAspGlyThrVal-353
 356-GlySerSerAlaValAsnGluSer-363
 365-LeuThrGlyGluSer-369
 374-LysMetProSerGluLysValThrAla-382
 393-IleArgThrAspArgThrGlyGlyGlyThrArg-403
 414-AlaLeuAlaGlnLysProArgThrAlaGluLeuAlaGlu-426
 486-ThrLeuAlaArgGluGlyIle-492
 495-GlyGlyLysGlnAlaIle-500
 510-IlePheAspLysThrGlyThrLeuThrGlnGlyLysProAlaValArgArg-526
 528-SerLeuLeuArgGlyThrAspGluAlaPhe-537

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545-LeuGluGlnGlnSerGluHisProLeu-553
 560-CysArgIleSerAspGlySerValPro-568
 570-IleAlaIleLysGlnArgLeuAsnArgIleGlyGluGlyVal-583
 589-ValAsnGlyGluThrGln-594
 605-AlaGluIleSerGlyLysGluProGlnThrGluGlyGlyGlySer-619
 635-LeuGlnAspProLeuLysAspSerAlaAlaGluAlaValArg-648
 650-LeuAlaGlyLysAsnLeu-655
 659-IleLeuSerGlyAspArgGluThrAlaVal-668
 684-AlaMetProGluAspLysLeuGluTyr-692
 694-LysAlaLeuGlnLysGluGlyLysLys-702
 707-GlyAspGlyIleAsnAspAla-713
 725-AlaAlaGlyGlyThrAspIleAlaArgAspGlyAlaAsp-737
 743-GluAspLeuArgThr-747
 753-AspGlnAlaArgArgThrArgHisIleIle-762
 807-ArgLeuHisLysArgGlyLysMetGlnSerGluLysMetProSerGluGln-823

Hydrophilic Regions - Hopp-Woods

1-MetLysLysThrCys-5
 21-ArgTyrGluAsnGluAspArgGluThrCys-30
 50-TyrLysGlnArgThrAlaAspAlaGlnLysThrGluLeuProPro-64
 77-ProGluValGlnSerAspPheValGlu-85
 87-HisGlyGlyThrArgGluAla-93
 112-GlnLeuLeuArgThrAspGlyIleVal-120
 133-ValValTrpAspAspGlyLysIleArgLeu-142
 160-AspAlaGlnLysIleGluAlaAlaAsnGlnLysGluArgLysGlnTyr-175
 201-GlyAspIleGluProAspPhe-207
 234-AlaLeuArgAspLeuLysAsnArgArgValGlyMet-245
 293-IleAlaArgArgLysAlaGlyAspAlaAlaGluArgLeuVal-306
 318-AspTyrProAspThrGlnGluThrCysGlu-327
 329-AlaValValLysLeuLysAlaGlyAsp-337
 375-MetProSerGluLysValThr-381
 393-IleArgThrAspArgThrGlyGlyGlyThrArg-403
 414-AlaLeuAlaGlnLysProArgThrAlaGluLeuAlaGlu-426
 486-ThrLeuAlaArgGluGlyIle-492
 518-ThrGlnGlyLysProAlaValArgArg-526
 531-ArgGlyThrAspGlu-535
 545-LeuGluGlnGlnSerGluHisProLeu-553
 561-ArgIleSerAspGlySerVal-567
 570-IleAlaIleLysGlnArgLeuAsnArgIleGlyGlu-581
 607-IleSerGlyLysGluProGlnThrGluGlyGlyGly-618
 637-AspProLeuLysAspSerAlaAlaGluAlaValArg-648
 661-SerGlyAspArgGluThrAlaVal-668
 684-AlaMetProGluAspLysLeuGluTyr-692
 694-LysAlaLeuGlnLysGluGlyLysLys-702
 730-AspIleAlaArgAspGlyAlaAsp-737
 743-GluAspLeuArgThr-747
 753-AspGlnAlaArgArgThrArgHisIleIle-762
 807-ArgLeuHisLysArgGlyLysMetGlnSerGluLysMetProSerGluGln-823

a705**AMPHI Regions - AMPHI**

67-LysIleLeuLeuLysLeu-72
 104-AspProIleProAla-108
 147-TyrMetGlnThrPheArgArgIleValAlaProGln-158
 169-AsnGluPheIleGlyLeuPheLysAsn-177

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183-ValValThrValThrGluLeuPheArgValAlaGln-194
 196-ThrAlaAsnArgThr-200

Antigenic Index - Jameson-Wolf

13-ThrGluThrArgAlaAspMet-19
 132-ValProLysGlyGlnTrpGlu-138
 165-ProProLeuSerAsnGlu-170
 193-AlaGlnGluThrAlaAsnArgThrTyrAsp-202
 226-AlaArgLeuGluLysArgPheAspArgTyrValAla-237

Hydrophilic Regions - Hopp-Woods

13-ThrGluThrArgAlaAspMet-19
 193-AlaGlnGluThrAlaAsnArgThr-200
 226-AlaArgLeuGluLysArgPheAspArgTyrValAla-237
 a706

AMPHI Regions - AMPHI

9-LeuValSerArgTrpLeuAsnSerTyr-17
 24-ArgLeuIleHisAlaValArg-30
 70-IleTyrSerLysAlaValGluArgMetLeuGlyThrValIleGly-84
 111-ThrAlaSerAlaLeuAlaGlyTrpAlaAla-120
 153-ArgAlaMetAsnValLeu-158
 183-LeuAlaAspAsnLeuThrAspCysSerLysMetIleAlaGluIleSerAsnGlyArg-201
 204-ThrArgGluArgLeuGluGluAsn-211
 243-MetGluAlaMetGlnHisAlaHisArgLysIleVal-254
 318-AlaLeuAlaGluHisLeuHis-324

Antigenic Index - Jameson-Wolf

1-MetAsnThrSerGlnArgAsnArgLeu-9
 11-SerArgTrpLeuAsnSerTyrGluArgTyrArgTyrArgArg-24
 73-LysAlaValGluArgMetLeu-79
 97-HisTyrPheHisGlyAsnLeu-103
 122-GlyLysAsnGlyTyrVal-127
 140-GlyAspAsnGlySerGluTrpPheAsp-148
 186-AsnLeuThrAspCysSerLysMetIleAlaGluIleSerAsnGlyArgArgMetThrArgGluArgLeuGlu
 GluAsnMetAlaLysMetArgGlnIleAsn-219
 221-ArgMetValLysSerArgSerHisLeuAlaAlaThrSerGlyGluSerArgIleSer-239
 249-AlaHisArgLysIleValAsn-255
 266-LysLeuGlnSerProLysLeuAsnGlySerGluIleArgLeuLeuAsp-281
 300-GlyArgHisAlaArgArgIleArgIleAspThrAlaIleAsnProGluLeuGluAlaLeuAla-320
 334-SerThrAsnMetArgGlnGluIle-341
 349-GlnArgThrArgArgLysTrpLeuAspAlaHisGluArgGlnHisLeu-364
 367-SerLeuLeuGluThrArgGluHisSer-375

Hydrophilic Regions - Hopp-Woods

3-ThrSerGlnArgAsnArgLeu-9
 17-TyrGluArgTyrArgTyrArgArg-24
 73-LysAlaValGluArgMetLeu-79
 142-AsnGlySerGluTrpPhe-147
 186-AsnLeuThrAspCysSerLysMetIleAla-195
 198-SerAsnGlyArgArgMetThrArgGluArgLeuGluGluAsnMetAlaLysMetArgGlnIleAsn-219
 221-ArgMetValLysSerArgSerHis-228
 232-ThrSerGlyGluSerArgIle-238
 249-AlaHisArgLysIleValAsn-255
 266-LysLeuGlnSerProLysLeuAsnGlySerGluIleArgLeuLeuAsp-281

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301-ArgHisAlaArgArgIleArgIle-308
 314-ProGluLeuGluAlaLeuAla-320
 336-AsnMetArgGlnGluIle-341
 349-GlnArgThrArgArgLysTrpLeuAspAlaHisGluArgGlnHisLeu-364
 367-SerLeuLeuGluThrArgGluHisSer-375
a707

AMPHI Regions - AMPHI

16-AsnLeuSerArgLeuGlnLysAla-23
 98-GluGlnGlyLeuGluAsnLeuArgArgLeuProSerVal-110
 147-GlyGlyLysThrThrGlyLysTyr-154
 222-ArgTyrHisGluAlaThrGlu-228
 267-ThrArgGlnThrTyrLysTyrIleAspAsp-276
 467-HisLysProLysGlyPheGlnThrThrAsnThr-477

Antigenic Index - Jameson-Wolf

1-XxxLysGluThrAlaPhe-6
 13-GlySerAsnAsnLeuSerArgLeuGlnLysAlaAla-24
 42-ProGlnAsnMetAspSerGlyIleLeu-50
 53-ArgValSerAlaGlyGluIleGlyAspIleArgTyrGluGluLysArgAspXxxLysSerAlaGluGlySerIle-77
 79-AlaPheAsnAsnLysXxxProLeuTyrArgAsnLysIleLeuAsn-93
 95-ArgAspValGluGlnGlyLeuGluAsnLeuArgArgLeuProSerValLysThrAspIle-114
 117-IleProSerGluGluGluGlyLysSerAspLeu-127
 130-LysTrpGlnGlnAsnLysProIleArg-138
 141-IleGlyIleAspAspAlaGlyGlyLysThrThrGlyLysTyrGlnGly-156
 162-XxxAspAsnProLeuGlyLeuSer-169
 180-LeuValHisLysThrAspLeuThrXxxAlaThrGlyThrGluThrGluSerGlySerArgSerTyr-201
 216-PheAsnHisAsnGlyHisArgTyrHisGluAlaThrGluGlyTyrSerValAsnTyrAspTyrAsnGlyLysGlnTyrGln-242
 269-GlnThrTyrLysTyrIleAspAspAlaGluIleGluValGlnArgArgArgSerAlaGlyTrpGluAlaGluLeuArgHis-295
 303-GlnLeuAspGlyLysLeuSerTyrLysArgGlyThrGlyMetArgGlnSerMetProAlaProGluGluAsnGlyGlyGlyThrIleProXxxXxxSerArgMetLysIle-339
 366-GlnTrpAsnLysThrPro-371
 374-AlaGlnAspLysLeuSerIleGlySerArgTyrThrValArgGlyPheAspGlyGluGlnSerLeuPheGlyGluArgGlyPheTyrTrpGlnAsnThr-406
 421-AlaAspTyrGlyArgValSerGlyGluSerAla-431
 434-ValSerGlyLysGln-438
 446-PheArgGlyGlyHisLysValGlyGly-454
 464-LysProLeuHisLysProLysGlyPheGln-473

Hydrophilic Regions - Hopp-Woods

1-XxxLysGluThrAlaPhe-6
 16-AsnLeuSerArgLeuGlnLysAlaAla-24
 58-GluIleGlyAspIleArgTyrGluGluLysArgAspXxxLysSerAlaGluGlySer-76
 95-ArgAspValGluGlnGlyLeuGluAsnLeuArgArgLeuProSerValLysThrAspIle-114
 118-ProSerGluGluGluGlyLysSerAspLeu-127
 141-IleGlyIleAspAspAlaGlyGlyLysThrThrGlyLysTyr-154
 180-LeuValHisLysThrAspLeu-186
 190-ThrGlyThrGluThrGluSerGlySerArgSer-200
 222-ArgTyrHisGluAlaThrGlu-228
 273-TyrIleAspAspAlaGluIleGluValGlnArgArgArgSerAlaGlyTrp-289
 291-AlaGluLeuArgHis-295

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306-GlyLysLeuSerTyrLysArgGlyThrGlyMetArgGlnSerMetProAlaProGluGluAsnGlyGly-32
8
333-XxxXxxSerArgMetLysIle-339
374-AlaGlnAspLysLeuSerIle-380
388-GlyPheAspGlyGluGln-393
422-AspTyrGlyArgValSerGlyGluSer-430
465-ProLeuHisLysProLysGly-471
a708

AMPHI Regions - AMPHI

26-ProSerArgAlaGluLysAlaAsnGlnValSerAsnIle-38
57-AlaSerIleGluAspAlaLeuLysSerAspPro-67
79-IleTyrGlnTyrLeuLys-84
89-AlaGlnGluSerPhe-93
119-AsnArgProAlaGluSerMetAla-126
128-PheAspLysAlaLeu-132
142-IleAlaAsnLeuAsnLys-147
176-ProAlaPheLysGluLeuAlaArg-183
221-LysAlaLeuGlyAsnAlaGln-227

Antigenic Index - Jameson-Wolf

2-ProPheLysProSerLysArgIleSer-10
19-AlaCysSerThrSerTyrArgProSerArgAlaGluLysAlaAsnGln-34
46-TyrMetArgGlyGlnAspTyrArgGlnXxxThrAlaSerIleGluAspAlaLeuLysSerAspProLysAsnGlu-70
84-LysValAsnAspLysAlaGlnGluSerPheArg-94
97-LeuSerIleLysProAspSerAlaGluIleAsnAsnAsnTyr-110
115-CysGlyArgLeuAsnArgProAlaGlu-123
131-AlaLeuAlaAspProThrTyrProXxx-139
146-AsnLysGlyIleCysSerAlaLysGlnGlyGln-156
176-ProAlaPheLysGluLeuAlaArgThrLysMet-186
191-LeuGlyAspAlaAspTyrTyrPheLysLysTyrGlnSerArgValGluValLeuGlnAlaAspAspLeu-213
3
240-PheProTyrSerGluGluLeuGln-247

Hydrophilic Regions - Hopp-Woods

4-LysProSerLysArgIle-9
24-TyrArgProSerArgAlaGluLysAlaAsnGln-34
46-TyrMetArgGlyGlnAspTyrArgGlnXxxThrAlaSerIleGluAspAlaLeuLysSerAspProLysAsnGlu-70
84-LysValAsnAspLysAlaGlnGluSerPheArg-94
99-IleLysProAspSerAlaGluIle-106
117-ArgLeuAsnArgProAlaGlu-123
149-IleCysSerAlaLysGlnGly-155
177-AlaPheLysGluLeuAlaArgThrLysMet-186
201-TyrGlnSerArgValGluValLeuGlnAlaAspAspLeu-213
a709

AMPHI Regions - AMPHI

6-SerLeuLeuAspMetProArgGlyGlu-14
18-ValValValAlaLeuIleAlaAlaMetGly-27
37-ProHisMetSerIleIleAlaAlaIleValValLeu-48
54-AlaArgGlyLeuLysTyrAsn-60
64-GlnGlyMetIleGlyAlaLeuAsnGlnGly-73
115-SerAlaPheAlaLeuCysSerVal-122

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130-SerLeuThrThrCysAlaThrVal-137
 168-LysMetSerProLeuSerAspThrXxx-176
 185-IleAspLeuPheGluHisIleLysAsnMetMetTyrThrThr-198
 209-MetLeuXxxLeuLeuPro-214
 221-LeuAsnSerValGluSerPheArg-228
 234-ThrGlyLeuValHisCysTyrSerLeuIleProPheAlaLeuLeuValValLeu-251
 261-AlaMetLeuPheThrValIleAlaAlaValAlaValThrTyr-274
 278-ThrProAspLeuArgGlnLeuGlyAlaTrpPhe-288
 299-XxxXxxAspIleAlaLysLeuIleSerArgGlyGly-310
 334-LeuGlyAlaIleProSerLeuLeuAspAlaValArgSerPheLeuThr-349
 382-ThrPheLysProVal-386
 395-ArgAsnLeuSerArgThrLeuGluAspAlaGlyThrValIleAsnProLeuValProTrpSerValCysGly
 ValPheIleXxxHis-423

Antigenic Index - Jameson-Wolf

9-AspMetProArgGlyGluAla-15
 55-ArgGlyLeuLysTyrAsnAspMetGln-63
 164-XxxXxxGlyXxxLysMetSerProLeuSerAspThrXxxGlyXxxSer-179
 222-AsnSerValGluSerPheArgSerGlnLeuGlu-232
 277-SerThrProAspLeuArgGln-283
 290-GlyGlyTyrLysLeuGluGlyGluAlaXxxXxxAspIleAlaLysLeuIleSerArgGlyGlyLeuGlu-312
 349-ThrAsnAlaGlyArgXxxThr-355
 378-LeuSerGlyGluThrPheLysProValTyrAspLysLeuGlyLeuHisSerArgAsnLeuSerArgThrLeu
 GluAspAlaGlyThr-406

Hydrophilic Regions - Hopp-Woods

9-AspMetProArgGlyGluAla-15
 57-LeuLysTyrAsnAspMetGln-63
 165-XxxGlyXxxLysMetSerProLeuSerAspThrXxxGly-177
 225-GluSerPheArgSerGlnLeuGlu-232
 279-ProAspLeuArgGln-283
 293-LysLeuGluGlyGluAlaXxxXxxAspIleAlaLysLeuIleSer-307
 396-AsnLeuSerArgThrLeuGluAspAlaGly-405

a710

AMPHI Regions - AMPHI

6-LysIleArgLeuMetArgGluLeuAsnLysTrpSerGln-18
 31-GlyTyrAlaLysIleGlu-36
 45-ProArgLeuGluGlnLeuAlaGlnIlePheLysIleAspMetTrpAspLeuLeuLys-63
 105-CysLysGluMetLeuGlu-110

Antigenic Index - Jameson-Wolf

1-MetGluThrHisGluLysIleArgLeuMetArgGluLeuAsnLysTrpSerGlnGluAspMetAlaGluLysLeuAla-26
 33-AlaLysIleGluArgGlyGluThrGlnLeuAsnIleProArgLeuGluGln-49
 62-LeuLysSerGlyGlyGlyGly-68
 74-AsnAspValAspThrAsnSerGlyGlu-82
 88-AlaGlnAspAlaSerGlyLys-94
 100-MetGluLeuLysHisCysLysGluMetLeuGluHisLysAspLysGluIleGluLeuLeuArgLysLeuThr
 Glu-124

Hydrophilic Regions - Hopp-Woods

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1-MetGluThrHisGluLysIleArgLeuMetArgGluLeuAsnLysTrpSerGlnGluAspMetAlaGluLysLeuAla-26
 33-AlaLysIleGluArgGlyGluThr-40
 45-ProArgLeuGluGln-49
 74-AsnAspValAspThrAsnSerGly-81
 100-MetGluLeuLysHisCysLysGluMetLeuGluHisLysAspLysGluIleGluLeuLeuArgLysLeuThrGlu-124
a711

AMPHI Regions - AMPHI

28-AlaGluSerTyrArgAsnLeuThrAlaSerGluIleAlaLysValTyrThrIleAlaArgMetThr 49
 *

AspLeuAspMetLeuAsnAspIleLys-58
 67-SerGlyGlnSerPheAspAspTrpArgLysGlyIleLeu-79
 95-GlyLysAspIleIleAspProAlaThrGlyGluValPheGlySerProArgArgLeuGluThrIleTyrArgThrAsnMet-121
 128-GlyGlnTyrGlnGlyTyrMet-134
 158-SerAlaIleAspGly-162
 195-ValGluArgGlnGly-199
 207-SerAspAsnLeuValGluThrHis-214
 258-LysTyrAspArgAlaLeuAlaHisGlnPheAla-268
 281-PheLysGlnLeuGluLysGluPheTyr-289
 329-GlnGluLeuAlaGlyMetThr-335
 352-SerArgGluGlyGlnAsnPhe-358
 360-AspSerTyrTyrAlaPheLeuProAspMetLeuGlnAsnProGlu-374
 395-TrpAlaValLeuLysTyrIleLysGluValAspGluIle-407
 413-ArgIleSerAsnAspLysGluIleAlaLys-422

Antigenic Index - Jameson-Wolf

11-SerLeuProProLysLysAlaIleGlu-19
 21-LeuGluSerLysLysValThrAlaGluSerTyrArgAsnLeuThr-35
 55-AsnAspIleLysThrSerMet-61
 63-GluSerAlaLysSerGlyGlnSerPheAspAspTrpArgLysGlyIle-78
 82-LeuSerAsnLysGlyTrpLeuHisProAsnGlyHisAsnGlyLysAspIleIleAspProAlaThrGlyGluValPheGlySerProArgArgLeuGluThrIleTyrArgThrAsnMet-121
 126-AsnAlaGlyGlnTyrGlnGly-132
 135-AlaAsnIleAspAlaArgProTyrTrp-143
 147-AlaValGlyAspSerArgThrArgProAlaHisSerAla-159
 165-TyrArgTyrAspAspProPheTrp-172
 177-ProProAsnGlyTyrAsnCysArgCysSer-186
 190-LeuSerGluArgAspValGluArgGlnGlyArgIleValGlyGlnSerThrSerAspAsnLeuValGlu-212
 215-LysIleTyrAsnLysLysGlyAspThr-223
 229-TyrLysAlaProAspGlySerLeuTyrThrThrAspArgGlyPheAspTyrAsnAlaGlyArgMetAsnTyrArgProAspLeuAspLysTyrAspArgAlaLeu-263
 268-AlaLysAlaGluMetGlyGlyAlaAspPheLysThrSerPheLysGlnLeuGluLysGluPheTyrGluValLysGlnArgLeuAspIleAspGlyLysProAspLysGluGlnLysIleLysIleArgAsnAlaLeu-313
 324-LeuSerLysGluThrGlnGlu-330
 342-SerAspAspThrLeuValLysGlnValAspSerArgGluGlyGlnAsnPheAspAspSerTyrTyr-363
 370-LeuGlnAsnProGluHisValIleArgAspAsnArgGlu-382
 387-AlaArgTyrLysGlySer-392
 400-TyrIleLysGluValAspGlu-406
 411-SerTyrArgIleSerAsnAspLysGluIleAla-421
 424-MetAlaLysLysLysValLeuLys-431

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Hydrophilic Regions - Hopp-Woods

13-ProProLysLysAlaIleGlu-19
 21-LeuGluSerLysLysValThrAlaGluSerTyrArg-32
 55-AsnAspIleLysThrSerMet-61
 63-GluSerAlaLysSerGlyGlnSerPheAspAspTrpArgLys-76
 93-HisAsnGlyLysAspIleIleAsp-100
 108-GlySerProArgArgLeuGluThr-115
 147-AlaValGlyAspSerArgThrArgProAla-156
 190-LeuSerGluArgAspValGluArgGlnGlyArgIleVal-202
 205-SerThrSerAspAsnLeuValGlu-212
 215-LysIleTyrAsnLysLysGlyAspThr-223
 238-ThrThrAspArgGlyPheAsp-244
 250-MetAsnTyrArgProAspLeuAspLysTyrAspArgAlaLeu-263
 268-AlaLysAlaGluMetGlyGlyAlaAspPheLysThrSerPheLysGlnLeuGluLysGluPheTyrGluVal
 LysGlnArgLeuAspIleAspGlyLysProAspLysGluGlnLysIleLysIleArgAsnAlaLeu-313
 324-LeuSerLysGluThrGlnGlu-330
 344-AspThrLeuValLysGlnValAspSerArgGluGlyGlnAsnPheAsp-359
 375-HisValIleArgAspAsnArgGlu-382
 400-TyrIleLysGluValAspGlu-406
 414-IleSerAsnAspLysGluIleAla-421
 424-MetAlaLysLysLysValLeuLys-431

a713**AMPHI Regions - AMPHI**

18-GluHisArgHisTrpGlu-23
 115-AspAlaAlaLysLysLeuAlaAlaProTrpProGlnIle-127
 150-ThrValTrpGlnAlaLeuThrHisIleAlaAsnSerVal-162
 257-AspAsnLeuAlaAlaLeuGln-263
 265-GlnAlaLysLysGln-269

Antigenic Index - Jameson-Wolf

1-MetGlnAsnAsnSerTyrGly-7
 13-ArgValGlyGlyLysGluHisArgHisTrpGluArgTyrAspIleAspSerAspPhe-31
 44-ArgLeuGlyProGluAlaAlaIleProAspLeuSerGlyGluSerCysGluValValIle-63
 74-GlySerGlnArgHisGlyLysSerLysGlyGlyArgGluLeuSerLeuSerGlyArgAspLeu-94
 106-LeuAsnValLysGly-110
 115-AspAlaAlaLysLysLeu-120
 134-ValGluAsnAsnProAlaLeuAspLysIleAspIleGluProGlyGluThrVal-151
 167-TrpLeuGluProAspGlyThrLeu-174
 192-SerArgThrAspSerArgArgAsnIleGluArgMetAspIleGluTrpAspThrAspAsnArgPheSerGlu
 -215
 222-SerHisGlyArgSerGlyAspSerAlaLysHisAspLeu-234
 236-TrpValTyrLysAspProThrMetThrLeuHisArgProLysThrValVal-252
 254-SerAspAlaAspAsn-258
 263-GlnLysGlnAlaLysLysGlnLeuAla-271
 284-ValGlyGlyHisLysThrArgAspGly-292
 302-HisValIleAspAspGluHisGlyIle-310
 321-PheMetLeuSerArgMetAspGlyThrGlnThrGluLeuArgLeuLysGluAspGlyIleTrpThrProAsp
 AlaTyrProLysLysAlaGluAlaAlaArgLysArgLysGlyLysArgLysGlyValSerHisLysGlyLysLys
 GlyLysLysGlnAlaGlu-376

Hydrophilic Regions - Hopp-Woods

14-ValGlyGlyLysGluHisArgHisTrpGluArgTyrAspIleAspSer-29
 54-LeuSerGlyGluSerCysGluValValIle-63

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76-GlnArgHisGlyLysSerLysGlyGlyArgGluLeuSerLeuSerGlyArgAspLeu-94
 115-AspAlaAlaLysLysLeu-120
 138-ProAlaLeuAspLysIleAspIleGluProGlyGlu-149
 168-LeuGluProAspGly-172
 193-ArgThrAspSerArgArgAsnIleGluArgMetAspIleGluTrpAspThrAspAsnArgPheSer-214
 222-SerHisGlyArgSerGlyAspSerAlaLysHisAspLeu-234
 246-HisArgProLysThr-250
 254-SerAspAlaAspAsn-258
 263-GlnLysGlnAlaLysLysGlnLeuAla-271
 286-GlyHisLysThrArgAsp-291
 302-HisValIleAspAspGluHisGlyIle-310
 325-ArgMetAspGlyThrGlnThrGluLeuArgLeuLysGluAspGlyIleTrp-341
 345-AlaTyrProLysLysAlaGluAlaAlaArgLysArgLysGlyLysArgLysGlyValSerHisLysGlyLys
 LysGlyGlyLysLysGlnAlaGlu-376

a714**AMPHI Regions - AMPHI**

6-IleLeuArgGlyLeuLeuPro-12
 34-LeuAspAlaValAlaGluSerAlaGlnSerValAlaAspAlaValAspProSer-51
 55-GlnMetLeuAlaAspTrpGluArgValLeuGlyLeu-66
 79-AlaValMetAlaLysLeuAsnGluThrGly-88
 98-LeuAlaGluAlaAla-102
 110-GluProGlnProPhe-114
 116-AlaGlyValAsnArgAlaGlyAspArgLeu-125
 155-AlaGlyAspArgLeuThrAspTyrSerAspAlaValIleGluSerLeuPheAsnArgLeuLys-175

Antigenic Index - Jameson-Wolf

15-SerTyrAlaArgAsnAlaProArgValArgAlaGlnAlaGluIleAspGlyAlaAla-33
 36-AlaValAlaGluSerAlaGlnSerVal-44
 46-AspAlaValAspProSerSerAlaGly-54
 64-LeuGlyLeuAspGlyThrGlyLysAsnArgGlnArgArgVal-77
 83-LysLeuAsnGluThrGlyGlyLeu-90
 107-GlnIleAspGluProGlnProPheArgAlaGlyValAsnArgAlaGlyAspArgLeuAlaPro-127
 138-ValArgGlyGlyAsnAsnArgIleThrArgPheArgAlaGlyIle-152
 154-AlaAlaGlyAspArgLeuThrAspTyrSerAspAlaValIle-167
 170-LeuPheAsnArgLeuLysPro-176

Hydrophilic Regions - Hopp-Woods

18-ArgAsnAlaProArgValArgAlaGlnAlaGluIleAspGlyAlaAla-33
 36-AlaValAlaGluSerAlaGlnSerVal-44
 46-AspAlaValAspProSerSer-52
 68-GlyThrGlyLysAsnArgGlnArgArgVal-77
 107-GlnIleAspGluProGlnProPhe-114
 117-GlyValAsnArgAlaGlyAspArgLeuAlaPro-127
 139-ArgGlyGlyAsnAsnArgIleThrArgPheArgAla-150
 154-AlaAlaGlyAspArgLeuThrAspTyrSerAspAlaValIle-167
 170-LeuPheAsnArgLeuLysPro-176

a715**AMPHI Regions - AMPHI**

15-GlnIleGluArgLeuGlyAsnGlyIle-23
 31-ArgArgLeuSerGluThrMetHis-38
 64-LeuSerAspSerGlyArgLeuLysAspSerPheSer-75
 94-IleHisAsnPheGlyGly-99

Antigenic Index - Jameson-Wolf

15-GlnIleGluArgLeuGlyAsnGlyIleGluAsnArgTyrLeuLeu-29

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47-TyrAlaGlyArgProLysTrpLeuGlyLeuLysTyrArgAspGlyLysProLeuSerAspSerGlyArgLeuLysAspSerPheSerThrLeuSerAspAsnAspThrAla-83
 98-GlyGlyMetAlaGlyArgAsnArgLysValArgIleProGlnArgGluPhe-114
 118-ThrAspAspAspLysGlnAlaLeuMetAspAspValGlnAsp-131

Hydrophilic Regions - Hopp-Woods

15-GlnIleGluArgLeuGlyAsn-21
 57-LysTyrArgAspGlyLysProLeuSerAspSerGlyArgLeuLysAspSerPhe-74
 78-SerAspAsnAspThr-82
 101-AlaGlyArgAsnArgLysValArgIleProGlnArgGlu-113
 118-ThrAspAspAspLysGlnAlaLeuMetAspAspValGlnAsp-131
a716

AMPHI Regions - AMPHI

33-GlyValHisLysSerAlaHisGly-40
 71-AlaThrValLysLysThrHisLysHisThrLysAla-82

Antigenic Index - Jameson-Wolf

1-MetAsnLysAsnIle-5
 23-AlaAlaAsnLysProAlaSerAsnAlaThrGlyValHisLysSerAlaHisGlySerCysGlyAlaSerLysSerAlaGluGlySerCysGlyAlaAlaGlySerLysAlaGlyGluGlyLysCysGlyGluGlyLysCysGlyAlaThrValLysLysThrHisLysHisThrLysAlaSerLysAlaLysAlaLysSerAlaGluGlyLysCysGlyGluGlyLysCysGlySerLys-102

Hydrophilic Regions - Hopp-Woods

23-AlaAlaAsnLysProAlaSer-29
 33-GlyValHisLysSerAlaHis-39
 43-GlyAlaSerLysSerAlaGluGlySerCys-52
 55-AlaGlySerLysAlaGlyGluGlyLysCysGlyGluGlyLysCys-69
 71-AlaThrValLysLysThrHisLysHisThrLysAlaSerLysAlaLysAlaLysSerAlaGluGlyLysCysGlyGluGlyLysCysGlySerLys-102
a717

AMPHI Regions - AMPHI

175-AlaValTyrAlaLeuAlaAsn-181
 209-LeuHisArgGlyLeu-213
 223-SerIleAlaTyrTrp-227
 241-AlaGlyLeuGluGlnLeuGly-247
 263-GlnSerIlePheSerThrValTrpThrProTyrIlePheArgAlaIleGluAla-280
 305-ThrGlyIlePheSerProLeuAlaSer-313
 347-LeuAsnValValArgLysThr-353
 358-LeuAlaThrLeuGlyAlaLeuAla-365
 401-SerSerCysArgLeuTrpGlnProLeuLysArgLeu-412
 430-CysPheGlyThrPro-434
 442-GlyValTrpAlaValTyrLeuAla-449
 457-LysAspLeuHisLysLeuPheHisTyr-465

Antigenic Index - Jameson-Wolf

1-MetAspThrLysGlu-5
 32-ProAlaAspAspIleGlyArg-38
 69-AlaAspLysAspThrLeu-74
 95-SerArgProSerLeuProSerGluIle-103
 135-MetGluGlyArgAla-139
 192-AsnArgCysArgLeuLysAlaValArgArgAlaPropheSerSer-206
 231-SerAlaAspArgLeuPheLeu-237
 278-IleGluAlaAsnAlaProProAlaArgLeu-287
 289-AlaThrAlaGluSer-293

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317-ProGluAsnTyrAla-321
 349-ValValArgLysThrArgProIleAla-357
 376-ProSerGlyGlyAlaArgGly-382
 398-LysThrGluSerSerCysArgLeu-405
 453-LeuArgHisArgLysAspLeuHis-460

Hydrophilic Regions - Hopp-Woods

1-MetAspThrLysGlu-5
 69-AlaAspLysAspThrLeu-74
 135-MetGluGlyArgAla-139
 192-AsnArgCysArgLeuLysAlaValArgArgAlaProPhe-204
 281-AsnAlaProProAlaArgLeu-287
 289-AlaThrAlaGluSer-293
 349-ValValArgLysThrArgPro-355
 378-GlyGlyAlaArgGly-382
 399-ThrGluSerSerCys-403
 453-LeuArgHisArgLysAspLeuHis-460

a718-1**AMPHI Regions - AMPHI**

28-IleThrAlaThrGlyArgValIleAlaGluHisProSerAsnPheIleThrProGln-46
 49-ArgAlaLeuPheGlu-53
 110-AspGlnAlaTyrGluMetMetAspSerLeuProThr-121
 124-AspLeuIleMetAspLeuMetAspAlaValGlyHisGly-136
 160-ProGlnSerTrpPheLys-165
 198-ArgSerValGlnGln-202
 210-ThrLeuSerTrpLeuTyrMetPhe-217
 219-HisTyrAlaValHisAspPheAlaGluPheLeuGluLeu-231
 255-ArgAlaValAlaGluIle-260
 279-AlaAlaAsnGlyMetThrSer-285
 320-ThrAsnAlaLeuGlyAsnIleHisAsnGluIleArg-331
 341-GlnValAlaGlnThrIleThrSerGlnIleIleGlyProPhe-354
 363-AspProAsnArgVal-367
 376-GluProLysAspIleAlaValPheAlaAspAlaIleProLysLeuValAsp-392
 395-ValGlnIleProGlu-399
 420-ArgGlnValProAspAsnPro-426
 448-HisGlnGluIleLeuAspGlyAlaLeuAspAsp-458
 469-LeuAsnProMetValArgGlnAlaValAlaAlaLeuAsnAlaCysAsnSerTyrGlu-487

Antigenic Index - Jameson-Wolf

4-IleMetAlaLysLysAsnAsnLysThrLysIleGlnLysProGluAlaAlaLeu-21
 30-AlaThrGlyArgValIleAla-36
 38-HisProSerAsnPhe-42
 44-ThrProGlnLysMetArgAlaLeuPheGluAspAlaGluSerGlyAspIleArgAlaGlnHis-64
 68-AlaAspIleGluGluArgAspSerAspIle-77
 81-MetGlyThrArgLysArgAla-87
 95-ValAlaProProArgAsnAlaThrProGluGluGluLysLeuSerAspGlnAlaTyrGluMet-115
 119-LeuProThrLeuGlu-123
 148-AspGlyLeuTyrLeuProArgAsnPheIleHisArgProGlnSerTrpPheLysTrpAspLysAspAsnGly
 Leu-172
 174-LeuArgThrArgGluAsnProGluGlyGluAla-184
 193-HisThrGlnLysSerArgSerValGlnGlnAlaArgAsnGlyLeuPhe-208
 237-ArgIleGlyLysTyrGlyAlaGlyAlaThrLysGluGluLysAsnThrLeu-253
 268-MetProGluGlyMetGluIleGluLeu-276
 280-AlaAsnGlyMetThrSerAla-286
 295-AspTrpCysGluLysSerAlaAla-302

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310-LeuThrSerGlyAlaAspGlyLysSerSerThrAsnAlaLeuGly-324
 328-AsnGluIleArgArgAspLeuLeuValSerAspAlaLysGlnVal-342
 359-TyrProHisAlaAspProAsnArgValProLysPheGluPheAspThrArgGluProLysAspIle-380
 397-IleProGluSerTrpValArgAspLysLeuVal-407
 410-AspValGlnGluGlyGluAlaValLeu-418
 420-ArgGlnValProAspAsnProValAsnArg-429
 440-ValProSerLysAlaThrGlyArgHisGlnGluIleLeuAspGlyAlaLeuAsp-457
 459-AlaLeuValGluProAspPheAsnSerGlnLeu-469
 484-AsnSerTyrGluGluAlaAspAla-491
 499-AsnLeuAspAsnAlaLysLeuArgThr-507
 519-LeuGlyGlnAspHisAlaArgAla-526

Hydrophilic Regions - Hopp-Woods

4-IleMetAlaLysLysAsnAsnLysThrLysIleGlnLysProGluAlaAlaLeu-21
 46-GlnLysMetArgAlaLeuPheGluAspAlaGluSerGlyAspIleArgAlaGlnHis-64
 68-AlaAspIleGluGluArgAspSerAspIle-77
 81-MetGlyThrArgLysArgAla-87
 96-AlaProProArgAsnAlaThrProGluGluLysLeuSerAspGlnAlaTyrGluMet-115
 165-LysTrpAspLysAspAsnGlyLeu-172
 174-LeuArgThrArgGluAsnProGluGlyGluAla-184
 195-GlnLysSerArgSerValGlnGlnAlaArg-204
 245-AlaThrLysGluGluLysAsnThrLeu-253
 270-GluGlyMetGluIleGluLeu-276
 295-AspTrpCysGluLysSerAlaAla-302
 312-SerGlyAlaAspGlyLysSerSerThr-320
 328-AsnGluIleArgArgAspLeuLeuValSerAspAlaLysGlnVal-342
 363-AspProAsnArgValProLysPheGluPheAspThrArgGluProLysAsp-379
 401-TrpValArgAspLysLeuVal-407
 410-AspValGlnGluGlyGluAlaValLeu-418
 421-GlnValProAspAsnProValAsn-428
 440-ValProSerLysAlaThrGlyArgHisGlnGluIleLeuAspGlyAlaLeuAsp-457
 485-SerTyrGluGluAlaAspAla-491
 501-AspAsnAlaLysLeu-505
 522-AspHisAlaArgAla-526

a720**AMPHI Regions - AMPHI**

19-GlnAlaValArgLeuLeuSerThrSer-27
 46-AlaProAspLeuIleGluValAsn-53
 66-AlaLeuArgAlaValGlnThrAla-73
 91-GlnThrAlaGluSerLeu-96
 102-ArgLeuAsnAlaLeuValAla-108
 126-GlyThrIleHisGlnIleAlaHisGluPheTyrGlyAspIleAlaArgAlaAlaGluLeuVal-146

Antigenic Index - Jameson-Wolf

1-GlyLeuGlnAsnArgLeuAsnArgLeuThrAlaLysGlnVal-14
 39-AlaHisGlyGluGluMetThrAla-46
 48-AspLeuIleGluValAsnArgAlaMetArgArgArgMetGlnAla-62
 74-AlaAlaGluSerGlyGlyLeuThrAla-82
 91-GlnThrAlaGluSerLeuArgAlaAlaAla-100
 112-AsnGlnLysProProLeu-117
 121-GlnAlaProIleAspGlyThr-127
 139-IleAlaArgAlaAlaGlu-144
 157-PheIleLysArgGlyThrLeuValAsnSerTyrAlaLys-169

Hydrophilic Regions - Hopp-Woods

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4-AsnArgLeuAsnArgLeuThrAla-11
 39-AlaHisGlyGluGluMetThrAla-46
 48-AspLeuIleGluValAsnArgAlaMetArgArgMetGlnAla-62
 74-AlaAlaGluSerGlyGly-79
 94-GluSerLeuArgAlaAlaAla-100
 139-IleAlaArgAlaAlaGlu-144

a721**AMPHI Regions - AMPHI**

86-AlaGlyTrpMetArgTrpLeuGlu-93
 119-ArgTyrIleSerAlaVal-124
 134-SerLysIlePheHisAlaAlaLeuThrAsnPheProAlaLeuAspGlyMetAspGluValLeuAla-155
 169-AsnProMetLysGluLeuGlnGlnLeuPheGlyLeu-181
 209-AspValPheAlaGln-213
 235-LysTyrAlaProIleSerValValGlnGluLeuGln-246
 281-TrpAlaGluGlyValLeuLysGlnProGlyGly-291
 293-AlaPheLeuThrGlyPheIleGlu-300

Antigenic Index - Jameson-Wolf

1-MetSerLysAsnAlaGln-6
 16-GluValGlnProLysAspGlyArgIle-24
 27-LeuProTyrGlyGlu-31
 33-ArgAlaValAspGlyArgProThrAspValProAla-44
 48-ThrGluGluAsnGlyHisAsp-54
 58-LeuAlaAsnSerSerArgAsnGlnLeu-66
 74-LeuTyrLysGluLysAsnGlyGlnProAlaPro-84
 93-GluPheThrProLysGlyMetPheAla-101
 104-GluTrpThrAspLysAlaAla-110
 114-AlaAlaLysGluTyrArg-119
 125-PheSerTyrAspThrLysGlyTyrVal-133
 148-AspGlyMetAspGluValLeu-154
 160-GlnIleLeuLysProGluThrGluGlnAsnProMetLysGluLeuLeu-175
 182-ProAspAlaGlyGluGluGluLeuLysAla-191
 197-ValGluAlaLysProLysAspValAlaLeu-206
 214-LeuAlaGluLysAspSerArgIle-221
 227-GlnThrAlaLysProAspLeuThrLysTyrAla-237
 254-AlaLysGlnGluAlaAspLysGlyAsnGlu-263
 276-ProAlaGlnLysGluTrpAla-282
 285-ValLeuLysGlnProGlyGly-291
 310-GlySerGlnThrGlyGlyLysAlaProAspGluArgValAla-323
 326-ThrAlaGluGluAlaAlaAla-332
 337-GlyMetSerGlyGluGluPheValLysIleLysGluSerGluGlyLys-352

Hydrophilic Regions - Hopp-Woods

1-MetSerLysAsnAlaGln-6
 17-ValGlnProLysAspGlyArgIle-24
 33-ArgAlaValAspGlyArgProThrAsp-41
 49-GluGluAsnGlyHis-53
 74-LeuTyrLysGluLysAsnGlyGln-81
 104-GluTrpThrAspLysAlaAla-110
 114-AlaAlaLysGluTyrArg-119
 148-AspGlyMetAspGluValLeu-154
 162-LeuLysProGluThrGluGlnAsnProMetLysGluLeuLeu-175
 183-AspAlaGlyGluGluGluLeuLysAla-191
 197-ValGluAlaLysProLysAspValAlaLeu-206
 214-LeuAlaGluLysAspSerArgIle-221

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228-ThrAlaLysProAspLeuThrLys-235
 254-AlaLysGlnGluAlaAspLysGlyAsnGlu-263
 276-ProAlaGlnLysGluTrpAla-282
 313-ThrGlyGlyLysAlaProAspGluArgValAla-323
 326-ThrAlaGluGluAlaAlaAla-332
 339-SerGlyGluGluPheValLysIleLysGluSerGluGlyLys-352

a724**AMPHI Regions** - AMPHI

6-LeuAlaLysLysThr-10
 12-GlnThrAlaLysAsnIleGlyGluThrLeuArg-22
 40-ArgValGlnLeuSer-44
 47-AlaAspGluThrLeuGlnAspLeuGluHisLeuGlnGlu-59

Antigenic Index - Jameson-Wolf

5-LysLeuAlaLysLysThrAlaGlnThrAlaLysAsnIleGlyGluThrLeuArgAlaAlaPheArgGlyLysIle-29
 34-SerSerGluProIleGlnArgValGlnLeuSerGlyLeuAlaAspGluThrLeuGlnAspLeuGluHis-56
 60-TyrGlyPheAlaSerHisProProAspGlySerGluAla-72
 77-LeuGlyGlyAsnThrSer-82
 90-GlnHisGlySerTyrArgIleLysAsnLeuLysProGlyGluThr-104
 108-AsnHisGluGlyAlaLysIleValIleLysGlnGlyLysIleIleGluAlaAspCysAspVal-128
 130-ArgValAsnCysLysGlnTyrGlu-137
 142-ThrAspAlaLysPhe-146
 162-GlnIleAsnGlyAsnGly-167
 170-AlaValGluGlyGlyAspGlyAlaThrPheSerGlyAspValAsnGlnThrGlyGlySerPheAsnThrAspGlyAspValValAla-198
 205-GlnHisProHisThrAspSerIleGlyGlyLysThrLeuProAlaGluProAla-222

Hydrophilic Regions - Hopp-Woods

5-LysLeuAlaLysLysThrAlaGlnThrAlaLysAsnIleGlyGluThrLeuArgAlaAlaPheArgGly-27
 46-LeuAlaAspGluThrLeuGlnAspLeuGluHis-56
 66-ProProAspGlySerGlu-71
 94-TyrArgIleLysAsnLeuLysProGlyGlu-103
 110-GluGlyAlaLysIleValIleLysGlnGlyLysIleIleGluAlaAspCysAspVal-128
 132-AsnCysLysGlnTyrGlu-137
 142-ThrAspAlaLysPhe-146
 190-PheAsnThrAspGlyAspVal-196
 207-ProHisThrAspSerIleGly-213

a726**AMPHI Regions** - AMPHI

12-AspThrLeuGlySerIleProGlu-19
 55-ProArgProSerGluTyrHisGlu-62
 74-AlaAlaAlaAlaArg-78
 110-IleAspSerPheTyrArg-115
 122-AlaArgGlnAlaAsp-126
 137-IleAlaAlaAlaArg-141
 180-IleGluThrAlaProGlyLeuAspAlaLeuGluLysGluIleGlu-194

Antigenic Index - Jameson-Wolf

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5-PheLysAsnGlyPheTyrAspAspThrLeuGlySerIleProGluGly-20
 24-ValArgAlaGluGluTyr-29
 37-AlaGlnGlyGlyGlnIleAlaAlaAspSerAspGlyArgProValLeuThrProProArgProSerGluTyrHisGluTrpAspGlyLysLysTrpGluIle-70
 78-ArgPheAlaGluGlnLysThr-84
 90-LeuAlaAlaLysAlaAspGluLeuLysAsnSer-100
 106-ProGlnValGluIleAspSerPheTyrArgGlnGluLysGluAlaLeuAlaArgGlnAlaAspAsnAsnAlaProThr-131
 151-LysValValGluLysSerAlaArg-158
 167-IleGlyLysArgGlnGlnLeuGluAspLysLeuAsnThr-179
 181-GluThrAlaProGlyLeuAspAlaLeuGluLysGluIleGluGlu-195

Hydrophilic Regions - Hopp-Woods

24-ValArgAlaGluGluTyr-29
 42-IleAlaAlaAspSerAspGlyArgPro-50
 55-ProArgProSerGluTyrHisGluTrpAspGlyLysLysTrpGluIle-70
 78-ArgPheAlaGluGlnLysThr-84
 90-LeuAlaAlaLysAlaAspGluLeuLysAsn-99
 114-TyrArgGlnGluLysGluAlaLeuAlaArgGlnAlaAspAsnAsnAla-129
 151-LysValValGluLysSerAlaArg-158
 167-IleGlyLysArgGlnGlnLeuGluAspLysLeuAsnThr-179
 187-AspAlaLeuGluLysGluIleGluGlu-195

a727**AMPHI Regions - AMPHI**

6-LeuLeuAlaAsnAsn-10
 12-GlnProIleAlaIleIleAla-18
 61-TyrAlaArgGluLeuGlu-66
 118-GlyCysIleAspGlyPheGly-124

Antigenic Index - Jameson-Wolf

28-HisHisGlnGlyTyrLysSerAlaPheAlaLysGln-39
 41-AlaValIleGluLysMetLysArgAspLysAlaGln-52
 60-AsnTyrAlaArgGluLeuGluGlnAlaArgAlaGluAlaLysLysTyrGluValLysAla-79
 86-LeuAlaLysLysGlnAlaGluValSerArgLeuLysThrGluAsnLysLysGluIleGluAsn-106
 108-LeuThrGlnAspArgLysAsnAlaGlyGlyGlyCysIleAspGlyPheGly-124
 135-LeuGlyTyrGlyAsn-139

Hydrophilic Regions - Hopp-Woods

41-AlaValIleGluLysMetLysArgAspLysAlaGln-52
 60-AsnTyrAlaArgGluLeuGluGlnAlaArgAlaGluAlaLysLysTyrGluValLysAla-79
 86-LeuAlaLysLysGlnAlaGluValSerArgLeuLysThrGluAsnLysLysGluIleGluAsn-106
 108-LeuThrGlnAspArgLysAsnAlaGly-116

a728**AMPHI Regions - AMPHI**

11-SerPhePheAlaLeuValPheAla-18
 39-AlaThrGluValProLysAsnPro-46
 48-AlaPheValAlaLysLeuAlaArgLeuPheArgAsnAla-60
 76-AsnLeuAlaGlyThrValAspAsp-83
 198-GluAspValTyrGluHisCysLeuGlyCysTyrGlnMet-210
 218-TyrArgAspValAlaAsnAspGlu-225
 235-SerAsnArgIleAlaSer-240
 249-GlnAsnMetArgGluLeuMetProArg-257
 355-GluLysGluValArgArgTyrAlaGluAlaAlaAlaArg-367

Antigenic Index - Jameson-Wolf

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29-IleAsnProArgTrp-33
 35-LeuSerAspThrAlaThrGluValProLysAsnProAsn-47
 57-PheArgAsnAlaAspArgAla-63
 69-GluSerIleArgThrGluGluAsnLeuAlaGlyThrValAspAspGlyProLeuGlnSerGluLysAspTyr-92
 98-ArgLeuSerArgLeuLysGluLysAlaLys-107
 112-ThrGluGlnGluHisGlyLys-118
 125-HisIleGlyGluGlyGly-130
 136-LeuSerGlnArgSerProGluAlaPheVal-145
 149-TyrLeuTyrArgAsnAspArgProPheSer-158
 166-ValHisGlyGluAsnTyrGluThrThrGlyGluTyrArgVal-179
 182-GlnProAspGlySerVal-187
 190-AlaAlaGlyArgGlyLysIleGlyGluAspValTyr-201
 217-LysTyrArgAspValAlaAsnAspGluGlnLysValTrpAspPheArgLysGluSerAsnArgIleAlaSer
 AspSerArgAsnSerValPheTyrGlnAsnMetArgGluLeuMetProArgGlyMetLysAlaAsnSer-263
 267-GlyTyrAspAlaAspGlyLeuProGlnLys-276
 280-SerPheAspAsnGlyLysLysArgGlnSerPheGluTyrTyrLeuLysAsnGlyAsn-298
 309-LeuLysAlaAspGlyValThr-315
 329-LeuAspGlyGlyArgIleValArgGluGluLysGlnGlyAspArgLeuProAspPhe-347
 352-GluAsnLeuGluLysGluValArgArgTyrAlaGluAlaAlaAlaArgArgSerGlyGlyArgArgAspLeu
 SerHis-377

Hydrophilic Regions - Hopp-Woods

38-ThrAlaThrGluValProLysAsnPro-46
 57-PheArgAsnAlaAspArgAla-63
 69-GluSerIleArgThrGluGluAsnLeu-77
 80-ThrValAspAspGlyProLeuGlnSerGluLysAspTyr-92
 98-ArgLeuSerArgLeuLysGluLysAlaLys-107
 112-ThrGluGlnGluHisGlyLys-118
 136-LeuSerGlnArgSerProGlu-142
 151-TyrArgAsnAspArgProPhe-157
 169-GluAsnTyrGluThrThrGlyGluTyr-177
 190-AlaAlaGlyArgGlyLysIleGlyGluAspValTyr-201
 217-LysTyrArgAspValAlaAsnAspGluGlnLysValTrpAspPheArgLysGluSerAsnArgIleAlaSer
 AspSerArgAsn-244
 250-AsnMetArgGluLeuMetProArgGlyMetLys-260
 268-TyrAspAlaAspGlyLeuPro-274
 282-AspAsnGlyLysLysArgGlnSer-289
 309-LeuLysAlaAspGlyValThr-315
 331-GlyGlyArgIleValArgGluGluLysGlnGlyAspArgLeuPro-345
 352-GluAsnLeuGluLysGluValArgArgTyrAlaGluAlaAlaAlaArgArgSerGlyGlyArgArgAspLeu
 SerHis-377

a729**AMPHI Regions - AMPHI**

21-CysThrMetIleProGlnTyr-27
 33-GluValAlaGluThrPheLysAsnAspThr-42
 55-HisAspTyrPheAla-59
 61-ProArgLeuGlnLysLeuIleAspIle-69
 149-GlnGlyTyrPheAla-153
 164-SerLeuIleAlaThrValAlaLys-171
 242-LeuAlaThrLeuIleAsn-247
 268-LysLeuProAlaGlyLeu-273
 322-LeuGlyGlyLeuPheLysSer-328
 371-ValGlnSerAlaPheGlnAspValAlaAsnAla-381
 388-LeuAspLysAlaTyrAspAlaLeuSerLysGlnSerArg-400

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419-GlyAlaLeuAspLeuLeuAspAla-426
 442-LeuThrArgAlaGluAsnLeuAlaAspLeuTyrLysAlaLeuGlyGlyGlyLeuLys-460

Antigenic Index - Jameson-Wolf

25-ProGlnTyrGluGlnProLysValGluVal-34
 36-GluThrPheLysAsnAspThrAlaAspSerGlyIleArgAlaValAsp-51
 53-GlyTrpHisAspTyrPheAlaAspProArgLeuGlnLys-65
 70-AlaLeuGluArgAsnThrSerLeuArgThr-79
 85-GluIleTyrArgLysGlnTyrMetIleGluArgAsnAsnLeuLeuPro-100
 105-AsnAlaAsnAspSerArgGlnGlySerLeuSerGlyGlyAsnValSerSerSerTyrLysVal-125
 138-GlyArgValArgSerSerSerGluAlaAla-147
 155-ThrAlaAsnArgAspAlaAla-161
 173-TyrPheAsnGluArgTyrAlaGluGluAlaMet-183
 188-ArgValLeuLysThrArgGluGluThrTyrLysLeuSerGluLeuArgTyr-204
 215-ArgGlnGlnGluAlaLeuIleGluSerAlaLysAlaAspTyr-228
 232-AlaArgSerArgGluGlnAlaArgAsn-240
 248-GlnProIleProAspAspLeuProAla-256
 277-ValLeuLeuAspArgProAspIleArgAlaAlaGluHisAlaLeuLysGlnAlaAsnAla-296
 310-ArgLeuThrGlySerValAspThrHisSerAlaGlu-321
 325-LeuPheLysSerGlyThr-330
 347-GlyThrAsnLysAlaAsnLeuAspValAlaLysLeuArgGlnGln-361
 383-ThrAlaArgGluGlnLeuAspLysAlaTyrAspAlaLeuSerLysGlnSerArgAlaSerLysGluAlaLeu
 Arg-407
 411-LeuArgTyrLysHisGlyValSer-418
 424-LeuAspAlaGluArgSerSerTyrSerAla-433
 442-LeuThrArgAlaGluAsnLeu-448
 455-LeuGlyGlyGlyLeuLysArgAspThrGlnThrAspLys-467

Hydrophilic Regions - Hopp-Woods

28-GluGlnProLysValGluVal-34
 36-GluThrPheLysAsnAspThrAlaAspSerGlyIleArgAlaVal-50
 61-ProArgLeuGlnLys-65
 70-AlaLeuGluArgAsnThrSerLeu-77
 91-TyrMetIleGluArgAsnAsn-97
 105-AsnAlaAsnAspSerArgGlnGlySer-113
 138-GlyArgValArgSerSerSerGluAlaAla-147
 156-AlaAsnArgAspAlaAla-161
 177-ArgTyrAlaGluGluAlaMet-183
 188-ArgValLeuLysThrArgGluGluThrTyrLysLeuSerGluLeuArgTyr-204
 215-ArgGlnGlnGluAlaLeuIleGluSerAlaLysAlaAspTyr-228
 232-AlaArgSerArgGluGlnAlaArgAsn-240
 250-IleProAspAspLeuPro-255
 277-ValLeuLeuAspArgProAspIleArgAlaAlaGluHisAlaLeuLysGlnAlaAsn-295
 315-ValAspThrHisSerAlaGlu-321
 350-LysAlaAsnLeuAspValAlaLysLeuArgGln-360
 383-ThrAlaArgGluGlnLeuAspLysAlaTyrAspAlaLeuSerLysGlnSerArgAlaSerLysGluAlaLeu
 Arg-407
 424-LeuAspAlaGluArgSerSerTyrSerAla-433
 442-LeuThrArgAlaGluAsnLeu-448
 458-GlyLeuLysArgAspThrGlnThrAspLys-467

a730**AMPHI Regions - AMPHI**

6-ArgGluIleLysLeuLeuAlaAlaCys-14
 26-LeuAlaAlaAspLeu-30
 67-GlnIleAsnValIleGlnAspTyrThrHisArg-77

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111-AsnHisAlaAlaAsp-115
 141-HisProAlaAspAlaTyrAspGlyProLysGlyGlyAsnTyrProLysProThr-158
 187-GlnArgIleSerAsnAsnTyrSerAsnLeuGlySerAsnPheSerAspArgAlaAspGlu-206
 214-HisAsnAlaLysLeu-218
 220-ArgTrpGlyAsnSerMetGluPheIleAsnGlyValAla-232
 234-GlyAlaLeuAsnProPheIleSer-241
 262-AlaAlaMetArgAsnIleAla-268
 277-AlaValIleGlyGlyLeuGlySerValAlaGlyPheGluLysAsnThrArgGluAlaValAspArgTrpIle
 GlnGlu-302
 305-AsnAlaAlaGluThrValGluAlaLeuValAsnValLeuProPheAlaLysValLysAsnLeuThrLysAla
 AlaLysPro-331
 347-ArgThrThrArgLysValThr-353
 355-GluThrGluGlyLeuAsnArgIleArgGln-364
 384-IleAsnValLeuSerGlyAsnSerIleGlnHis-394
 426-ThrHisGluIleSerAspIleValThr-434
 475-GluProAlaThrGlyLysValValThrAlaPheProAsp-487

Antigenic Index - Jameson-Wolf

2-LysProLeuArgArgLeuIle-8
 35-PheIleThrAspAsnAlaGlnArgGlnHisTyrGluProGlyGlyLys-50
 55-GlyAspProArgGlySerValSerAspArgThrGlyGlnIle-68
 74-TyrThrHisArgMetGly-79
 97-ArgPheSerGlyHisGlyTyrGluGluHisAlaProPheAsp-110
 112-HisAlaAlaAspSerAlaSerGluGluLysGlyAsnValAspGluGlyPhe-128
 133-LeuAsnTrpGluGlyHisGluHisHisProAlaAspAlaTyrAspGlyProLysGlyGlyAsnTyrProLys
 ProThrGlyAlaArgAspGluTyrThrTyrHisVal-168
 170-GlyThrAlaArgSerIleLysLeuAsnProThrAspThrArgSerIleArgGlnArgIleSerAspAsnTyr
 SerAsn-195
 197-GlySerAsnPheSerAspArgAlaAspGluAlaAsnArgLysMetPheGluHisAsnAlaLysLeuAspArg
 TrpGlyAsnSer-224
 257-TyrAlaIleAspLysAlaAlaMet-264
 271-ProAlaGluGlyLys-275
 287-GlyPheGluLysAsnThrArgGluAlaValAsp-297
 299-TrpIleGlnGluAsnProAsnAlaAlaGluThrValGlu-311
 323-LysAsnLeuThrLysAlaAlaLysProGlyLysAlaAlaValSerGlyAspPhe-340
 344-TyrAsnThrArgThrThrArgLysValThrThrGluThrGluGlyLeuAsnArgIleArgGlnAsnGlnLys
 AsnSerAsnIleHisGluLysAsnTyrGlyArgAspAsnProAsnHisIle-384
 397-TyrGlyAspGluAlaGlyGlyGly-404
 407-PheProGlyLysProGlyLysThrThrPhePro-417
 419-HisTrpSerAlaSerLysIleThrHisGluIleSerAsp-431
 433-ValThrSerProLysThrGln-439
 450-TyrIleAlaLysGlyArgProAlaArg-458
 461-SerTyrGluThrArgAspGlyIleArgIle-470
 472-ThrValTyrGluProAlaThrGlyLys-480
 485-PheProAspArgThrSerAsnProLysTyrAsnProValLys-498

Hydrophilic Regions - Hopp-Woods

2-LysProLeuArgArgLeuIle-8
 39-AsnAlaGlnArgGlnHisTyrGluProGlyGly-49
 55-GlyAspProArgGlySerValSerAspArgThrGly-66
 102-GlyTyrGluGluHisAlaPro-108
 112-HisAlaAlaAspSerAlaSerGluGluLysGlyAsnValAspGluGly-127
 135-TrpGluGlyHisGluHisHisPro-142
 144-AspAlaTyrAspGlyProLysGlyGlyAsnTyrProLys-156
 158-ThrGlyAlaArgAspGluTyr-164

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170-GlyThrAlaArgSerIleLys-176
 178-AsnProThrAspThrArgSerIleArgGlnArgIleSerAsp-191
 200-PheSerAspArgAlaAspGluAlaAsnArgLysMetPheGluHisAsnAlaLysLeuAspArgTrpGlyAsn-223
 257-TyrAlaIleAspLysAlaAlaMet-264
 271-ProAlaGluGlyLys-275
 287-GlyPheGluLysAsnThrArgGluAlaValAsp-297
 303-AsnProAsnAlaAlaGluThrValGlu-311
 323-LysAsnLeuThriLysAlaAlaLysProGlyLysAlaAlaVal-336
 347-ArgThrThrArgLysValThrThrGluThrGluGlyLeuAsnArgIleArgGlnAsnGlnLysAsnSerAsnIleHisGluLysAsnTyrGlyArgAspAsnProAsn-382
 399-AspGluAlaGlyGly-403
 424-LysIleThrHisGluIleSerAsp-431
 450-TyrIleAlaLysGlyArgProAlaArg-458
 463-GluThrArgAspGlyIleArgIle-470
 485-PheProAspArgThrSerAsnProLys-493
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AMPHI Regions - AMPHI
 17-AlaCysAlaValPro-21

Antigenic Index - Jameson-Wolf

22-GluAlaTyrAspAspGlyGlyArgGlyHis-31
 34-ProValGlnAsnGlnAlaGlyThrAlaAsp-43
 45-ArgAlaPheSerCysGluAsnGly-52
 56-HisValArgArgLeuAspGlyGlyArgIleAlaLeuArgLeuAspGlyArgArgAlaValLeuSerSerAspValAlaAlaSerGlyGluArgTyrThrAla-89
 92-GlyLeuPheGlyAsnGlyThrGluTrpHisGlnLysGlyGlyGluAla-107
 113-AspAlaTyrGlyAsnSerValGluThrSerCysArgAlaArg-126

Hydrophilic Regions - Hopp-Woods

22-GluAlaTyrAspAspGlyGlyArgGlyHis-31
 56-HisValArgArgLeuAspGlyGlyArgIleAlaLeuArgLeuAspGlyArgArgAlaValLeu-76
 80-ValAlaAlaSerGlyGluArgTyrThrAla-89
 100-TrpHisGlnLysGlyGlyGlu-106
 119-ValGluThrSerCysArgAlaArg-126

a732**AMPHI Regions - AMPHI**

14-LeuGlyAlaIleSer-18
 43-ValGlnSerIleArgThrMetAlaGluValTyrGly-54
 66-AspAlaAspLeuPheGluGlyAlaMetLysGlyMetVal-78
 95-GluIleLysGluSerThrSerGly-102
 115-AspGlyPheValLysValValSerProIleGluAsp-126
 155-GluAlaValLysLysMet-160
 183-ValAsnLeuThrArg-187
 214-GluArgThrValGluSerValAsnThrAlaAlaLys-225
 283-LysAlaValProGluAspTyrValTyr-291
 297-SerLeuAlaGlyIleProAlaGluLeu-305
 322-SerGluIleValAlaGly-327
 400-LeuValGlyHisIleGlyAsn-406
 446-ArgArgIleProAsnProAlaLysAsp-454
 459-LysAlaLeuAspLeuValLysSerProGluGlnTrpGlnLysSerLeu-474

Antigenic Index - Jameson-Wolf

30-AlaAlaGluLysAspArgArgAspAsnGluVal-40
 59-AsnTyrTyrGlnAspLysProAspAlaAspLeuPhe-70